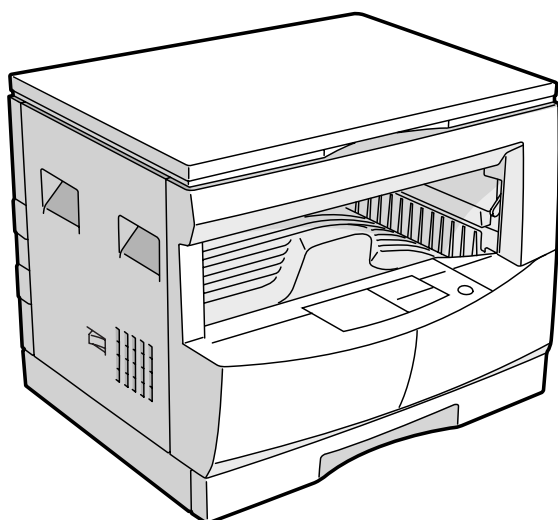


# SHARP SERVICE MANUAL

CODE: 00ZAR161//A1E



## DIGITAL COPIER

## AR-160 MODEL AR-161

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Parts marked with "△" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.



**Warning!**

This product is a class A product.

If it is operated in households, offices or similar surroundings, it can produce radio interferences at other appliances, so that the user has to take adequate countermeasures.

CLASS 1 LASER PRODUCT

LASER KLASSE 1

LUOKAN 1 LASERLAITE

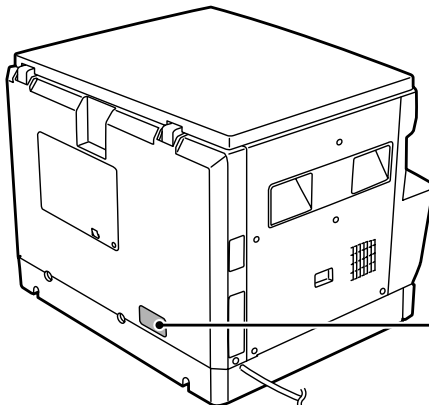
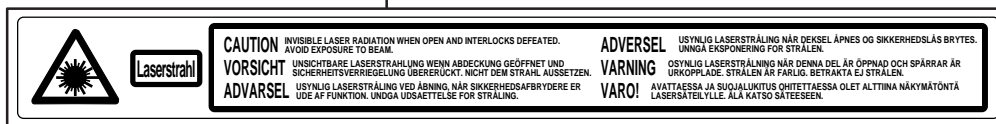
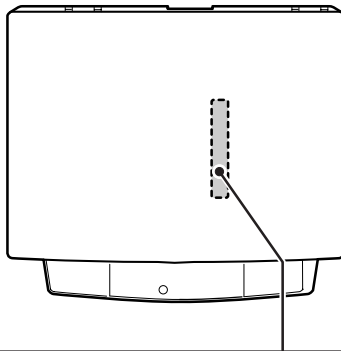
KLASS 1 LASERAPPARAT

**VAROITUS!**

LAITTEEN KÄYTTÄMINEN  
MUULLA KUIN TÄSSÄ  
KÄYTTÖOHJEESSA MAINITULLA  
TAVALLA SAATTAA ALTISTAA  
KÄYTTÄJÄN  
TURVALLISUUSLUOKAN 1  
YLITTÄVÄLLE  
NÄKYMÄTTÖMÄLLE  
LASERSÄTEILYLLE.

**VARNING**

OM APPARATEN ANVÄNDS PÅ  
ANNAT SÄTT ÄN I DENNA  
BRUKSANVISNING  
SPECIFICERATS, KAN  
ANVÄNDAREN UTSÄTTAS FÖR  
OSYNLIG LASERSTRÅLNING,  
SOM ÖVERSKRIDER GRÄNSEN  
FÖR LASERKLASS 1.



**CLASS 1  
LASER PRODUCT  
LASER KLASSE 1**



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## [1] GENERAL

### 1. General

This model is a digital personal copier produced with key words of "Comfort able copy, Clear copy, Easy copy" providing high copy performances and copy productivity.

### 2. Target user copy volume: Monthly average

Stand-alone copier: 2000~3000 sheets

Compound machine: 4000~5000 sheets

### 3. Main features

#### A. High-speed laser copying

- First-copy time is only 7.2 seconds (normal mode).
- Copying speed is 16 copies/min., which adapts to business use, allowing improvement of working efficiency.

#### B. High-quality digital image

- High-quality copying at 600 dpi is performed.
- In addition to the automatic exposure mode, the manual exposure can be adjusted in five steps.
- The photo mode copying function allows clear copying of delicate halftone original images such as monochrome photos and color photos. Photo mode is adjustable in five steps

#### C. Substantial copying features

- Zoom copying from 50% to 200% in 1% increments can be performed.
- Continuous copying of maximum 99 sheets can also be performed.
- Useful special features such as the XY zoom, black and white reverse, and dual page copy are available.
- Toner save mode reduces toner consumption by approximately 10%.
- User programs allow setting/modification of functions for customer needs. Also the user programs allow the internal auditor to be controlled.

#### D. Scan once/ Print many (Only AR-161 for USA/Canada)

- The copier is equipped with a 1-page memory buffer. This memory allows the copier to scan an original 1 time only and make up to 99 copies. This feature allows for improved workflow, reduced operating noise from the copier and reduced wear and tear on the scanning mechanism, which provides for a higher reliability.

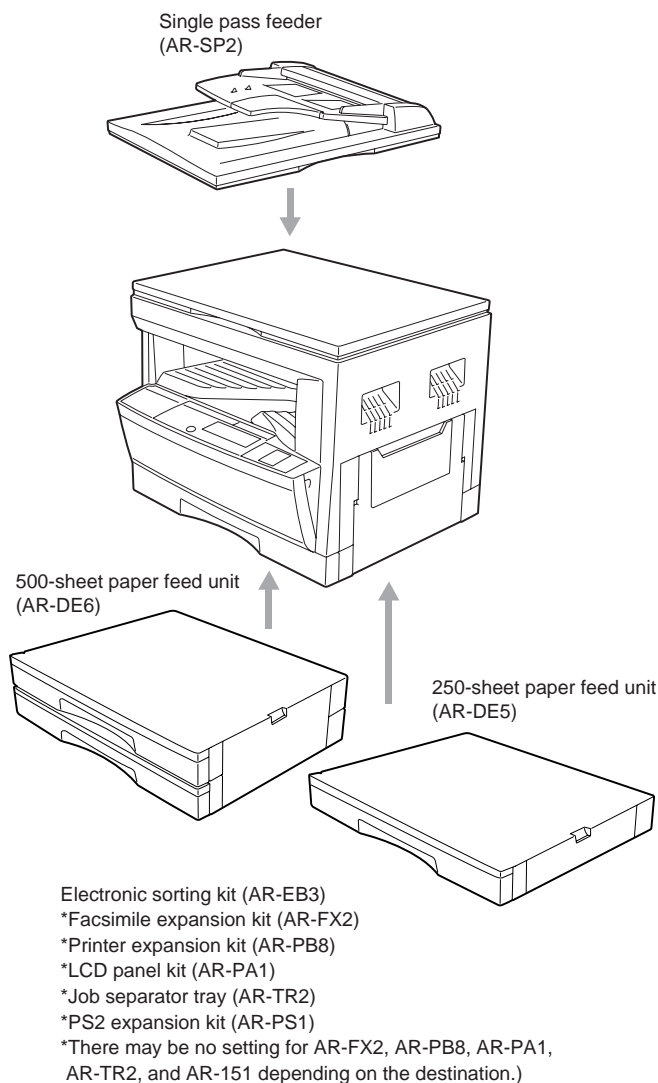
#### E. Optional features

- An optional single pass feeder (SPF) allows automatic document feeding of up to 30 sheets.
- An optional electronic sort board allows many useful copier features to be used. Multiple sets of copies can be sorted without the aid of a sorter and each set can be offset from the previous set. Also the erase, margin shift, and 4 in 1 and 2 in 1 functions are available. (To use the 2 in 1 and 4 in 1 and sort/group functions, an optional SPF is also needed.) (Offset only for AR-161)
- This copier can be used as a laser printer by installing an optional printer upgrade kit. (Depends on the destination)
- This copier can be used as a facsimile machine by installing an optional facsimile upgrade kit. (Depends on the destination)

#### F. Environmentally friendly design

- Paper output tray is housed in the copier for space saving.
- Preheat mode and auto power shut-off mode are provided to reduce power consumption in standby mode.

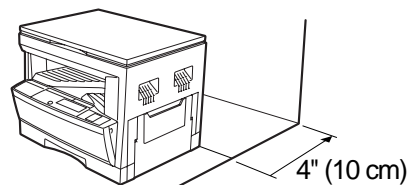
## 4. System configuration



## 5. Copier installation

Do not install your copier in areas that are:

- damp, humid, or very dusty
- exposed to direct sunlight
- poorly ventilated
- subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.
- Be sure to allow the required space around the machine for servicing and proper ventilation.





## [2] SPECIFICATIONS

### 1. Copy mode

#### A. Type

Type	Desk-top
------	----------

#### B. Copy speed

##### (1) Basic speed

1 scan 1 copy	16 sheets/min
1 scan multi copy	Not available (Available for AR-161 for USA/Canada)

Condition: Copy speed in the normal copy from all the paper feed ports including the manual paper feed port.

##### (2) Continuous copy speed (Sheets/min)

Paper size		Normal	Enlargement (200%)	Reduction (50%)
AB system	A3	9	9	9
	B4	10	10	10
	A4	16	16	14
	A4R	12	12	12
	B5	16	16	16
	B5R	14	14	14
Inch system	11" × 17"	9	9	9
	8.5" × 14"	10	10	10
	8.5" × 13"	10	10	10
	8.5" × 11"	16	16	14
	8.5" × 11"R	12	12	12
	8.5" × 5.5"	16	16	16

#### C. First copy time

##### (1) Basic speed

First copy time	7.2sec (A4, 8.5" × 11"/1st cassette/with OC)
-----------------	--

#### D. Document

Max. document size	A3, 11" × 17"
Document reference position	Left side center
Detection (Platen)	None
Detection size	A3, B4, A4, A4R, B5, B5R 11" × 17", 8.5" × 14", 8.5" × 13", 8.5" × 11", 8.5" × 11"R, 8.5" × 5.5"

##### (1) SPF/R-SPF

Standard/Option	Option SPF, AR-SP2 RSPF; Not available
Document load capacity	30 sheets (56 ~ 90g/m <sup>2</sup> equivalent)
Document size (Max. ~ Min.)	A3 ~ A5 11" × 17" ~ 8.5" × 5.5"
Document replacement speed	16 sheets/min (A4 normal copy)
Document set/Paper feed direction	Face up, Center reference, Paper feed from the top
Document weight	56 ~ 90g/m <sup>2</sup> , 15 ~ 23.9 lbs
Document size detection	On the document feed tray
Document mixture	Copy mode: Not Available

### E. Paper feed

Copy size	(Max. ~ Min.) Cassette: (A3 ~ A6)	
Paper feed system	1 cassette + Multi manual paper feed	
Paper feed capacity	250 × 1 (Paper feed tray) + 100 (Multi bypass feed tray)(56 ~ 80g/m <sup>2</sup> equivalent)	
Remaining quantity detection	Cassette section	Empty detection available, size detection by key input
	Manual tray	Only empty detection available

##### (1) Paper feed section of the copier

Paper feed size	A3, B4, A4, A4R, B5, B5R, A5 11" × 17", 8.5" × 14", 8.5" × 13", 8.5" × 11", 8.5" × 11"R, 8.5" × 5.5"
Side front	Front 1st step
Paper feed capacity	250 sheets (56 ~ 80g/m <sup>2</sup> equivalent)
Detection	Paper empty detection available, size detection (by key input)
Weight	56 ~ 80g/m <sup>2</sup>
Special paper	Recycled paper

##### (2) Manual paper feed section

Paper feed size	A3 ~ A5
Paper feed capacity	100 sheets
Detection	Size detection not available, paper empty detection available
Weight	56 ~ 128g/m <sup>2</sup>
Special paper	Recycled paper, OHP film, labels
Paper feed	Single except for recycled paper

##### (3) Option paper feed unit

	1-step paper feed unit	2-step paper feed unit
Model	AR-DE5	AR-DE6
Paper feed size	A3, B4, A4, A4R, B5, B5R, A5 11" × 17", 8.5" × 14", 8.5" × 13", 8.5" × 11", 8.5" × 11"R, 8.5" × 5.5"	
Capacity (56 ~ 80g/m <sup>2</sup> )	About 250 sheets × 1 step	About 250 sheets × 2 steps
Paper weight	56 ~ 80 g/m <sup>2</sup>	
Moisture preserving heater	Standard provision	
Detection	Paper empty detection, size detection (by key input)	
Paper size setting	User setting (by key input)	
External dimensions (W × D × H)	570 × 570 × 103mm	570 × 570 × 208mm
Weight	About 8.5kg	About 14kg
Special paper	Recycled paper	
Power	Supplied from the machine (5V/24V)	

### F. Job speed

S-S (1st step)	100% (document replacement rate)
----------------	----------------------------------

Condition: With SPF

### G. Multi copy

Max. number of multi copy	99 sheets
---------------------------	-----------



## H. Warmup time

Warmup time	Approx. 35 sec (Condition: Standard condition)
Pre-heat	Available
Jam recovery time	Second (Condition: Left for 60 sec after door open. Standard condition, polygon motor not stopped)
	Second (Condition: Polygon motor stopped)

## I. Copy magnification ratio

Fixed magnification ratio	AB system: 50, 70, 81, 86, 100, 115, 122, 141, 200% Inch system: 50, 64, 77, 95, 100, 121, 129, 141, 200%
Zooming	50 ~ 200%
Independent zooming/vertical	Available (50 ~ 200%)
Independent zooming (horizontal)	Available (50 ~ 200%)

## J. Print density

Density mode	Auto/Manual/Photo
No. of manual adjustment	5 steps (Manual/Photo)
Toner save mode	Set by the user program

## K. Print area

Max. print area	AB system	Max.	416 × 293
		A3	416 × 293
		B4	360 × 253
		A4	206 × 293
		A4R	293 × 206
		B5	178 × 253
		B5R	253 × 178
	Inch system	Max.	428 × 275
		11" × 17"	428 × 275
		8.5" × 14"	352 × 212
		8.5" × 13"	212 × 326
		8.5" × 11"	212 × 275
		8.5" × 11"R	275 × 212
		8.5" × 5.5"	212 × 136

## L. Void width

Void area	Lead edge 1 ~ 4mm, rear edge 4mm or less, both side 4mm or less
Image loss	Max. 4mm in total of lead edge and rear edge, max. 4mm in total of right and left edges (Normal copy)

## M. Auto duplex

Standard/Option	Not installable
-----------------	-----------------

## N. Paper exit/finishing

Paper exit section capacity	Face down 250 sheets
Job separator	Job separator, option (AR-TR2)
	Upper: FAX/Printer, Lower: Copier Upper: 100sheets, Lower 150sheets
Full detection	Available (Job separator upper step)
Finishing	Electronic sort board: Option (AR-EB3)
Electronic sort capacity	A4 standard document 60 sheets
Offset function	AR-161: Available
Staple function	None

### (1) Electronic sort board (Option)

Electronic sort	Sorting	60 sheets of A4 standard documents
	Grouping	60 sheets of A4 standard documents
Rotation copy	If there is paper of same size as the document, the image is rotated to copy even though the paper is set in the different direction from the document direction.	
2 in 1, 4 in 1	Copies of 2 pages or 4 pages are integrated into one surface. Divided by solid lines, (Selectable by the user program.)	
Edge erase	Images surrounding the document are erased when copying. (Adjustable in 0 ~ 20mm by the user program.)	
Center erase	The image at the center is erased when copying. (Adjustable in 0 ~ 20mm by the user program.)	
Margin shift	Binding margin is made at the left edge of the set documents.	

## O. Additional functions

APS*	<input type="radio"/>	(APS not available by flowing in during use of SPF)
AMS*	<input type="radio"/>	(AMS not available by flowing in during use of SPF)
Duplex	<input checked="" type="checkbox"/>	
Document count	<input checked="" type="checkbox"/>	
Sorter	<input type="checkbox"/>	When the electronic sort board installed.
Independent zooming	<input type="radio"/>	Vertical/Horizontal: 50 ~ 200%
1 set 2 copy	<input type="radio"/>	Enlargement inhibited, inhibited during the use of SPF
Binding margin	<input type="checkbox"/>	Shift width 9mm
Edge erase	<input type="checkbox"/>	Width 5mm (Adjustable 0 ~ 20mm)
Black-white reversion	<input type="radio"/>	Whole surface only
2 in 1, 4 in 1	<input type="checkbox"/>	
Rotation copy	<input type="checkbox"/>	
Memory copy	<input checked="" type="checkbox"/>	(AR-161 for USA/Canada: Available)
Pre-heat function	<input type="radio"/>	Conditions set by the user program
Auto power shut off function	<input type="radio"/>	Conditions set by the user program
Auto tray switching	<input type="radio"/>	
Message display	<input type="checkbox"/>	(FAX/Printer extension)
User program	<input type="radio"/>	
Total counter	<input type="radio"/>	

\*: By the document size set key

△: When an option is installed



**P. machine composition**

Model	
AR-160	Standard model
AR-161	Standard model (with shifter) (USA/Canada: with memory copy)

**(1) Option**

Machine	Model	Power supply
250 sheets paper feed unit	AR-DE5	Supplied by the copier.
500 sheets paper feed unit	AR-DE6	Supplied by the copier.
SPF	AR-SP2	Supplied by the copier
Electronic sorting kit	AR-EB3	Supplied by the copier.
Printer expansion kit	AR-PB8	Supplied by the copier.
Facsimile extension kit	AR-FX2	Supplied by the copier.
LCD panel kit (20 digits × 2 lines)	AR-PA1	Supplied by the copier.
Job separator tray	AR-TR2	
PS2 expansion kit	AR-PS1	
Extension memory for FAX (2MB)	AR-MM5	
Extension memory for FAX (4MB)	AR-MM6	
Extension memory for FAX (8MB)	AR-MM7	

**Q. Other specifications**

Photoconductor type	OPC (Organic Photo Conductor)
Photoconductor drum dia.	30mm
Copy lamp	Xenon lamp
Developing system	Dry 2-component magnetic brush development
Charging system	Saw teeth charging
Transfer system	Non-contact (Corona) electrostatic transfer
Separation system	Natural separation
Fusing system	Heat roller + Separation pawl
Cleaning system	Contact blade

**R. Package form**

Body	Body/Accessories
------	------------------

**S. External view**

External dimensions (W × D × H)	590 × 531 × 467 mm
Occupying area (W × D)	590 × 531mm (When the manual tray is installed.)
Weight	About 34.1kg

**T. Power source**

Voltage	AC120V, 220V, 240V ± 15%
Frequency	50/60Hz common

**U. Power consumption**

Max. power consumption	About 1.3KW/h
------------------------	---------------

\* EnergyStar standard (The second level conformity)

Pre-heat	About 60Wh
Auto power shut off	About 4.8Wh

**V. Reliability**

Target users	Stand-alone copier	Monthly average 2,000 ~ 3,000 copies
	Compound machine	Monthly average 4,000 ~ 5,000 copies

**W. Noise**

Noise	BA standard
-------	-------------

**X. Digital performance**

Resolution	Reading	400 dpi
	Writing	600 dpi
Gradation	Reading	256 gradations
	Writing	Binary



## [3] CONSUMABLE PARTS

### 1. Supply system table

#### A. USA, CANADA

NO	Name	Content	Life	Model name	Package	Remark
1	Developer cartridge (Black)	Toner/developer cartridge (Toner 610g, Developer 395g) × 1 Vinyl bag × 1	15K	AR-200TD (*1 AR-200TD-J)	1	Life setting by A4 6% document
2	Drum cartridge	Drum cartridge × 1 Vinyl bag × 1	30K	AR-200DR (*1 AR-200DR-J)	1	
3	Toner kit (Black)	Toner bottle (Toner 610g) × 10 Charging hose × 1 Toner cap × 10	150K	AR-200MT (*1 AR-200MT-J)	1	Life setting by A4 6% document
4	Waste toner box	Waste toner box × 10	*2	AR-200TB	1	
5	Developer kit (Black)	Toner bottle (Developer 395g) × 10 Developer cap × 10 DV blade × 10	150K	AR-200MD (*1 AR-200MD-J)	1	
6	Protective cover	MG cover × 10	*3	AR-200MG	1	
7	Drum kit	Drum × 1 Drum fixing plate	30K	AR-200MR (*1 AR-200MR-J)	1	
8	Blade kit	Blade × 10 Mocket (F/R) Each × 10	*4	AR-200CB	1	
9	Heat roller	Upper heat roller × 1	150K	AR-160UH	1	

\* 1: For USA government

\* 2: Replace every 10 times of developer cartridge recycling (Recommendation)

\* 3: Replace every 2 times of developer cartridge recycling (Recommendation)

\* 4: Replace every 2 times of drum cartridge recycling (Recommendation)

Note: Maintenance parts other than mentioned above must be ordered through the parts department using the proper part number.

#### B. Asia, Southeast Asia

NO	Name	Content	Life	Model name	Package	Remark
1	Developer cartridge (Black)	Toner/developer cartridge (Toner 610g, Developer 395g) × 1 Vinyl bag × 1	15K	AR-200TD	1	Life setting by A4 6% document
2	Drum cartridge	Drum cartridge × 1 Vinyl bag × 1	30K	AR-200DR	1	
3	Toner kit (Black)	Toner bottle (Toner 610g) × 10 Charging hose × 1 Toner cap × 10	150K	AR-200CT	1	Life setting by A4 6% document
4	Waste toner box	Waste toner box × 10	*2	AR-200TB	1	
5	Developer kit (Black)	Toner bottle (Developer 395g) × 10 Developer cap × 10 DV blade × 10	150K	AR-200CD	1	
6	Protective cover	MG cover × 10	*3	AR-200MG	1	
7	Drum kit	Drum × 1 Drum fixing plate	30K	AR-200CR	1	
8	Blade kit	Blade × 10 Mocket (F/R) Each × 10	*4	AR-200CB	1	
9	Heat roller	Upper heat roller × 1	150K	AR-160UH	1	

\* 2: Replace every 10 times of developer cartridge recycling (Recommendation)

\* 3: Replace every 2 times of developer cartridge recycling (Recommendation)

\* 4: Replace every 2 times of drum cartridge recycling (Recommendation)

Note: Maintenance parts other than mentioned above must be ordered through the parts department using the proper part number.



**C. Europe / Australia / New Zealand / Middle East / Africa / CIS**

NO	Name	Content	Life	Model name	Package	Remark
1	Developer cartridge (Black)	Toner/developer cartridge (Toner 610g, Developer 395g) × 1 Vinyl bag × 1	15K	AR-200DC	1	Life setting by A4 6% document
2	Drum cartridge	Drum cartridge × 1 Vinyl bag × 1	30K	AR-200DM	1	
3	Toner kit (Black)	Toner bottle (Toner 610g) × 10 Charging hose × 1 Toner cap × 10	150K	AR-200LT	1	Life setting by A4 6% document
4	Waste toner box	Waste toner box × 10	*2	AR-200TB	1	
5	Developer kit (Black)	Toner bottle (Developer 395g) × 10 Developer cap × 10 DV blade × 10	150K	AR-200LD	1	
6	Protective cover	MG cover × 10	*3	AR-200MG	1	
7	Drum kit	Drum × 1 Drum fixing plate	30K	AR-200LR	1	
8	Blade kit	Blade × 10 Mocket (F/R) Each × 10	*4	AR-200CB	1	
9	Heat roller	Upper heat roller × 1	150K	AR-160UH	1	

\* 2: Replace every 10 times of developer cartridge recycling (Recommendation)

\* 3: Replace every 2 times of developer cartridge recycling (Recommendation)

\* 4: Replace every 2 times of drum cartridge recycling (Recommendation)

**D. Hong Kong / China**

NO	Name	Content	Life	Model name	Package	Remark
1	Developer cartridge (Black)	Toner/developer cartridge (Toner 610g, Developer 395g) × 1 Vinyl bag × 1	15K	AR-200TD-C	1	Life setting by A4 6% document
2	Drum cartridge	Drum cartridge × 1 Vinyl bag × 1	30K	AR-200DR-C	1	
3	Toner kit (Black)	Toner bottle (Toner 610g) × 10 Charging hose × 1 Toner cap × 10	150K	AR-200CT-C	1	Life setting by A4 6% document
4	Waste toner box	Waste toner box × 10	*2	AR-200TB-C	1	
5	Developer kit (Black)	Toner bottle (Developer 395g) × 10 Developer cap × 10 DV blade × 10	150K	AR-200CD-C	1	
6	Protective cover	MG cover × 10	*3	AR-200MG-C		
7	Drum kit	Drum × 1 Drum fixing plate	30K	AR-200CR-C	1	
8	Blade kit	Blade × 10 Mocket (F/R) Each × 10	*4	AR-200CB-C	1	
9	Heat roller	Upper heat roller × 1	150K	AR-160UH	1	

\* 2: Replace every 10 times of developer cartridge recycling (Recommendation)

\* 3: Replace every 2 times of developer cartridge recycling (Recommendation)

\* 4: Replace every 2 times of drum cartridge recycling (Recommendation)

Note: Maintenance parts other than mentioned above must be ordered through the parts department using the proper part number.





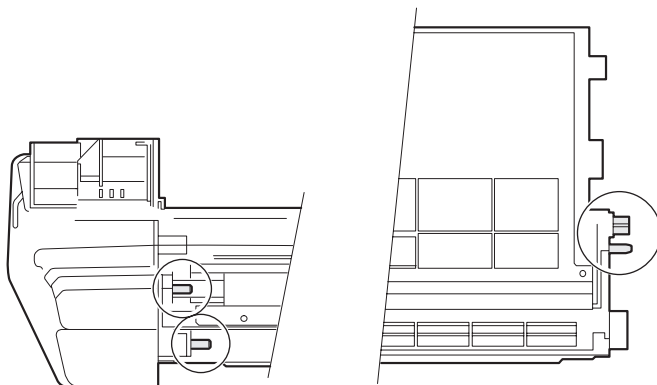


## 4. Consumable parts recycling procedure

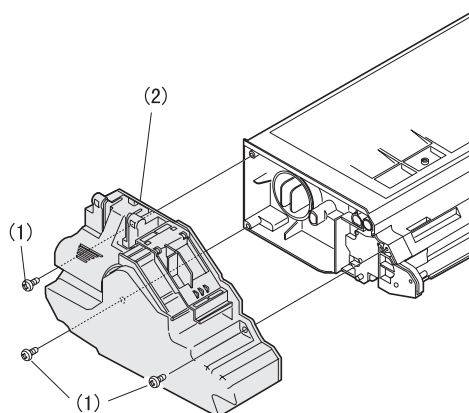
### A. TD cartridge

1) Check the external view.

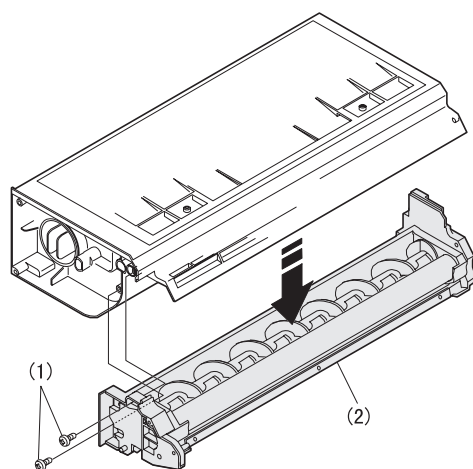
Note: Be careful especially of breakage of the pins and the ATC sensor connector shown below.



2) Remove the waste toner box unit.



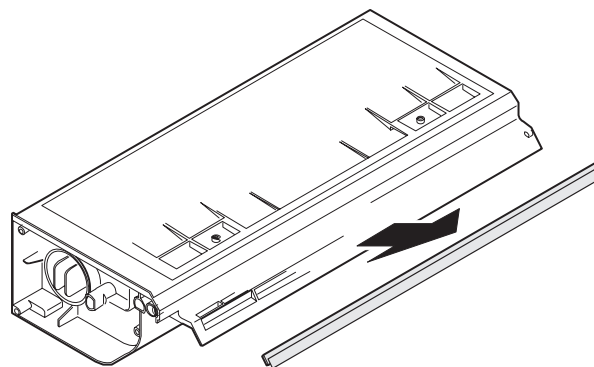
3) Remove the developing unit.



4) Remove the DV blade.

Note: Be sure to remove adhesive completely.

Remove adhesive together with the base PET.



5) Tilt the developing unit, rotate the DV gear clockwise, and remove developer.

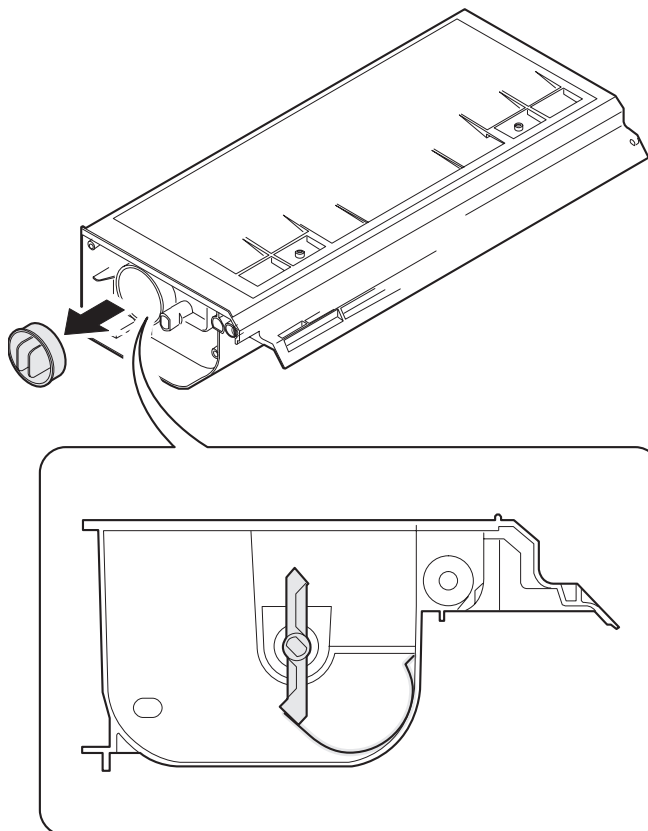
6) Clean and remove developer on the MG roller and toner on the developing doctor completely with a vacuum cleaner or an air blower.

7) Shake the developer bottle about 10 times and supply developer to the developing unit. Turn the stirring roller to distribute developer evenly.

8) Install the toner box.

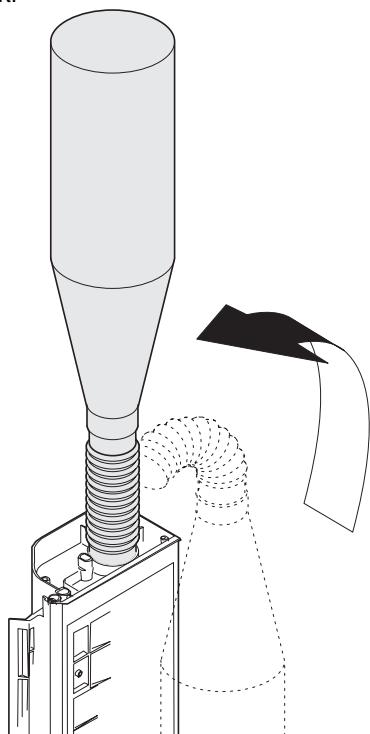
9) Shake the toner bottle about 20 times and install the toner supply hose to the toner bottle.

10) Remove the toner cap. While visually inspecting from the toner supply port, stop the TH shaft at the vertical position. (The TH mylar is on the lower side.) (Turn the gear on the back of the toner box counterclockwise to set the TH mylar on the lower side.)





- 11) Face the toner supply port of the toner box upward with the toner bottle put straight, and insert the supply hose into the toner supply port.

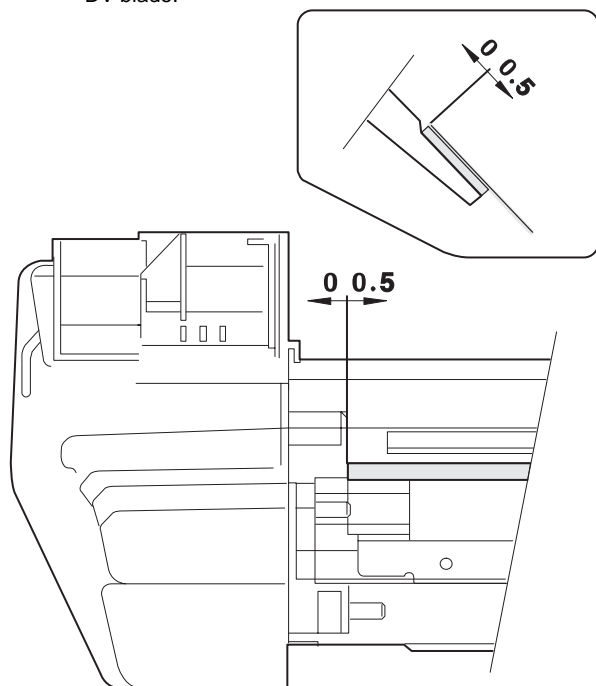


- 12) Lift the toner bottle and supply toner.  
13) Remove the supply hose from the toner box with care not to spill toner, and attach the toner cap.

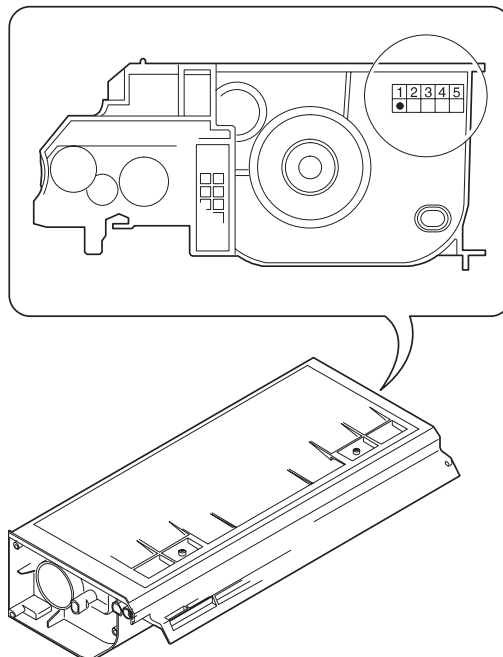
Note: If the toner cap is not attached properly, toner splash may occur.

- 14) Install the waste toner box.  
15) Check the operations of the DV lever and the toner box shutter.  
16) Wipe and clean the developer unit with alcohol, and attach the DV blade to it.

- (Note)
- Dry alcohol completely before attaching the DV blade,
  - When attaching the DV blade, be careful not to scratch it and eliminate slack.
  - After attaching, be careful not to scratch and damage the DV blade.

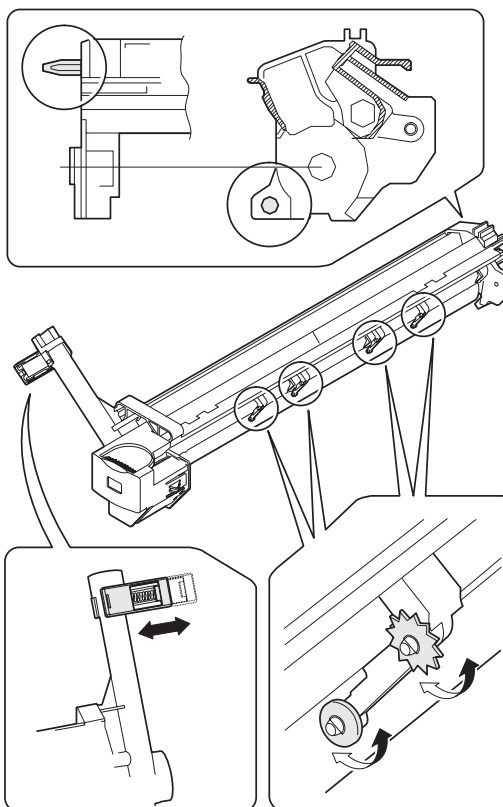


- 17) Shake the developing unit 5 times left and right horizontally.  
18) Check the distribution state of developer on the MG roller. Rotate the MG roller and visually check for no improper distribution of developer which may be caused by foreign materials.  
19) Mark the number of times of recycling on the back of the toner box with white paint.  
Max. times of recycling: 5 times



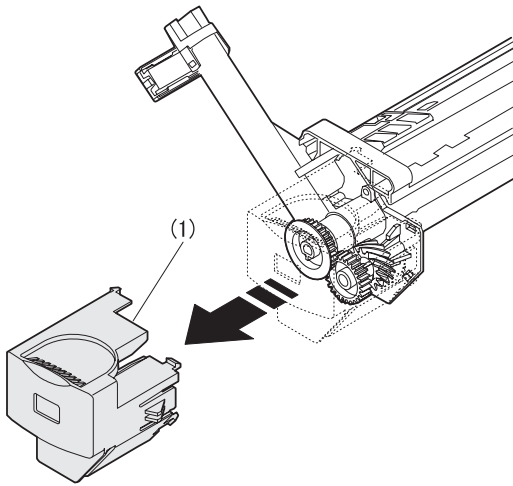
## B. Drum unit

- 1) Check the external view.
- Check for damage or cracks on the boss and the boss hole.
  - Check to insure that the waste toner pipe shutter slides smoothly.
  - Check to insure that the start ring and the CRU washer rotate smoothly.

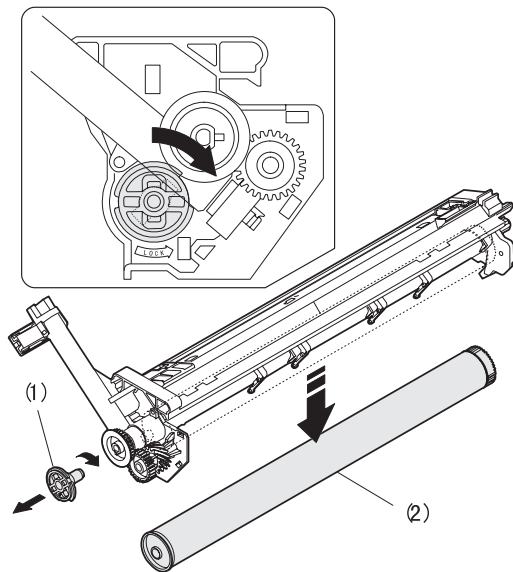




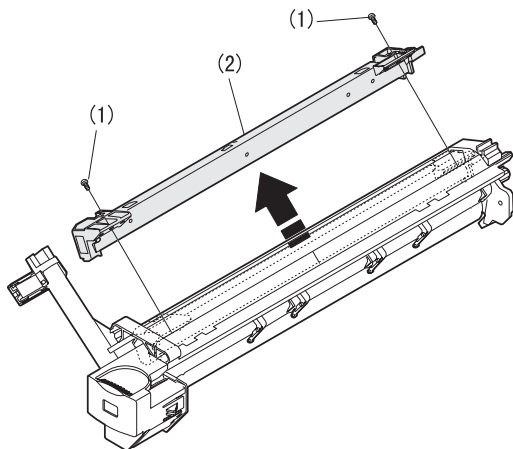
- 2) Remove the drum cover.



- 3) Remove the drum fixing plate and the photoconductor drum.  
(Note) Dispose the drum fixing plate which was removed.

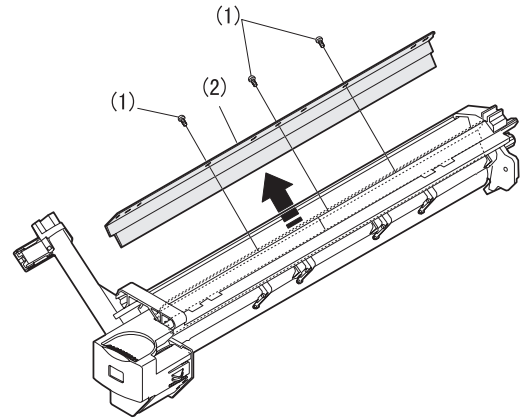


- 4) Check the cleaning blade and the red felt for no damage.
- If there is any damage, execute all procedures from item 5) and later.
  - If there is no damage, execute the procedure of item 12).
- 5) Remove the main charger.  
(Cleaning the screen grid and the sawteeth.)

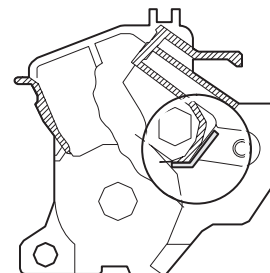
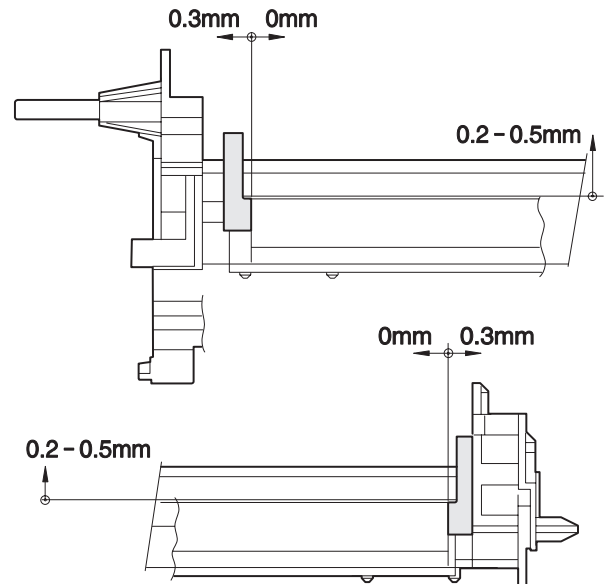


- 6) Remove the cleaning blade.

Note: Dispose the cleaning blade which was removed.



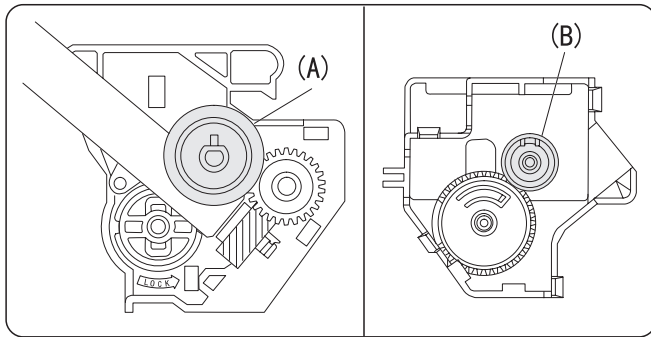
- 7) Clean the cleaning section and the waste toner pipe to remove waste toner completely with a vacuum cleaner.  
8) Remove the felt and duplex tape completely.  
Note: Be careful not to scratch or bend the sub blade.  
9) Attach the cleaning blade.  
10) Attach the felt.





- 11) Attach the main charger.
- 12) Attach the drum fixing plate and the photoconductor drum.  
Apply grease to the inside of the photoconductor drum. (Dia. 2)
- 13) Attach the detection gear.

Note: • The detection gear is not installed to the drum cartridge packed with the main body. Add a new one.

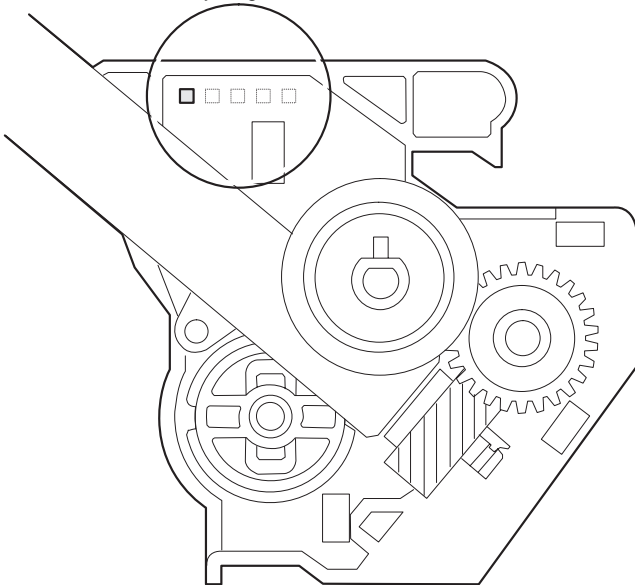


- 14) Attach the drum cover.

Note: After attaching the drum cover, do not make a copy.

- 15) Mark the number of times of recycling on the side of the cover with white paint.

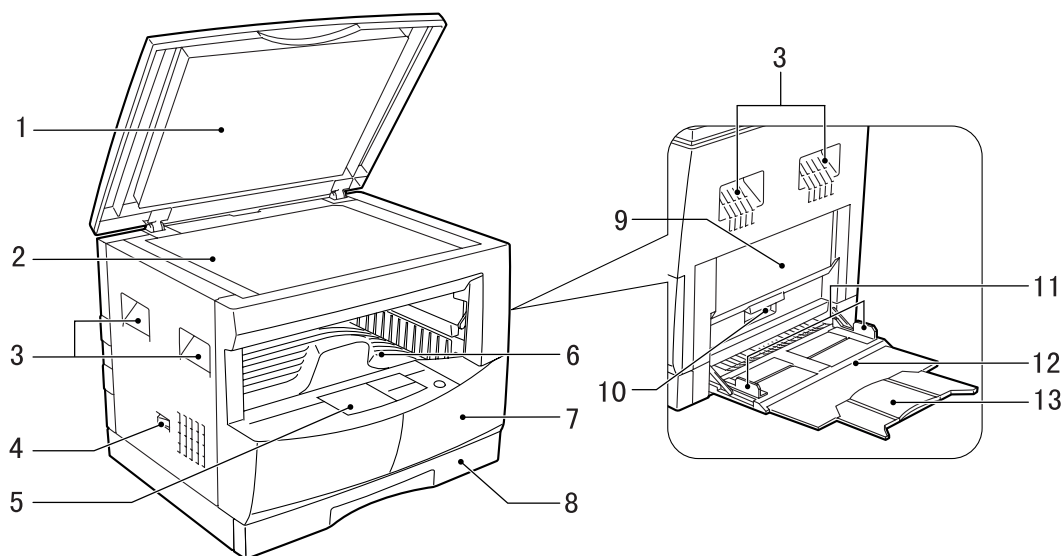
Max. times of recycling: 5 times





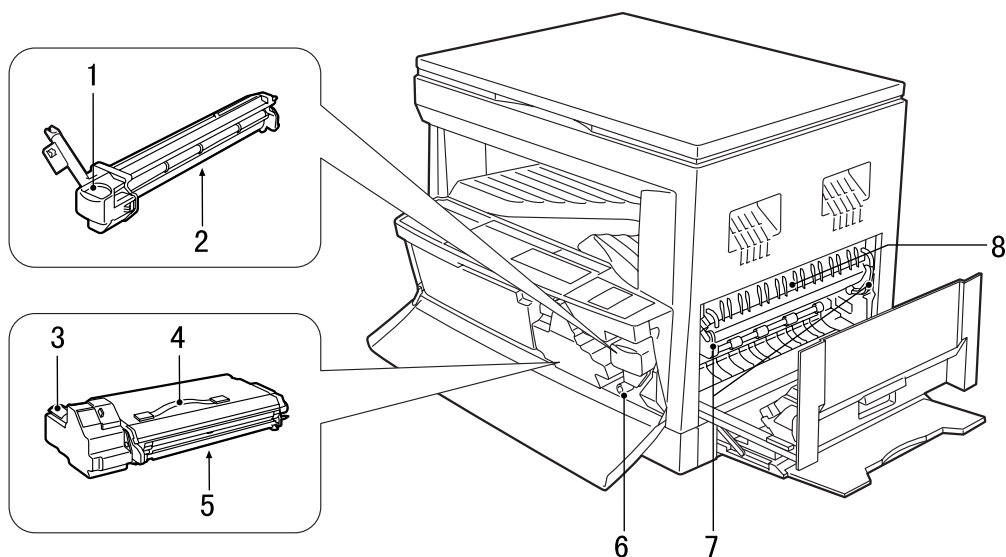
## [4] EXTERNAL VIEWS AND INTERNAL STRUCTURES

### 1. Appearance



1	Original cover	2	Original table (OC table)	3	Handles
4	Power switch	5	Operation panel	6	Paper output tray
7	Front cover	8	Paper tray	9	Side cover
10	Side cover handle	11	Bypass tray guides	12	Bypass tray
13	Bypass tray extension				

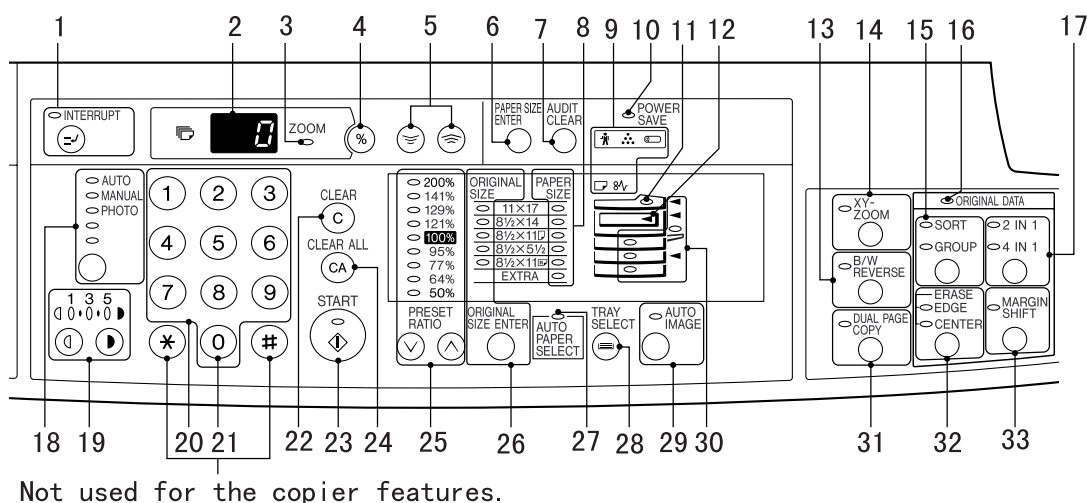
### 2. Internal



1	Drum cartridge handle	2	Drum cartridge	3	TD cartridge handle
4	TD cartridge strap	5	TD cartridge	6	Roller rotating knob
7	Fusing unit release levers	8	Paper guide		



### 3. Operation Section



1	Interrupt key and indicator	2	Copy quantity display	3	ZOOM indicator
4	Copy ratio display key	5	Zoom keys	6	PAPER SIZE ENTER key
7	AUDIT CLEAR key	8	PAPER SIZE indicators	9	Alarm indicators
10	POWER SAVE indicator	11	SPF indicator	12	Output tray full indicator
13	B/W REVERSE key and indicator	14	XY-ZOOM key and indicator	15	SORT/GROUP key and indicators
16	ORIGINAL DATA indicator	17	2 IN 1 / 4 IN 1 key and indicators	18	AUTO/MANUAL/PHOTO key and indicators
19	Light and dark keys and indicators	20	Numeric keys	21	Zero key
22	CLEAR key	23	START key and indicator	24	CLEAR ALL key
25	PRESET RATIO selector keys and indicators	26	ORIGINAL SIZE ENTER key and indicators	27	AUTO PAPER SELECT indicator
28	TRAY SELECT key	29	AUTO IMAGE key and indicator	30	Paper feed location/misfeed location indicators
31	DUAL PAGE COPY key and indicator	32	ERASE key and indicators	33	MARGIN SHIFT key and indicator

#### \* 1

ON: Indicates that the machine is in the energy saving (pre-heat) mode.

Blink: Indicates that the machine is in the process of resetting from the energy saving mode or just after supplying the power. (During warmup)

OFF: Indicates that resetting from the energy saving mode is completed and that the fusing temperature is in ready state.

The combinations of the above display lamps are as follows:

(○ = ON, ● = OFF)

Lamp	Immediately after power ON	Ready	Copying
Pre-heat lamp	Blink	●	●
Ready lamp	●	○	●
Other lamps	○	○	○

Lamp	Energy saving mode (Pre-heating)	Energy saving mode (Auto power shut off)	Resetting from energy saving mode	Copy is started during resetting from energy saving mode
Pre-heat lamp	○	○	Blink	Blink
Ready lamp	○	●	○	●
Other lamps	○	●	○	○

#### \* 2

Maintenance lamp

When the set count number (set by the simulation) is reached, the lamp lights up. The machine does not stop.



TD cartridge replacement required indicator

When toner density is lower than a specified level, the TONER DEVELOPER CARTRIDGE REPLACEMENT indicator lights up to warn the user.

If toner is not added after approximately 10 sheets are copied, the indicator starts blinking and machine starts to supply toner. (Toner Developer cartridge replacement indicator keeps lighting up)

If toner density is not back to specific level after two minutes, the READ indicator goes out and Toner Developer indicator starts blinking, and the copier stops.



Photoconductor cartridge replacement lamp

When the copy count reaches 29,000 after installing a Photoconductor cartridge, the lamp lights up.

When 1,000 copy is made after that, the lamp blinks instead of lighting. The machine does not stop.

Press and hold the clear key for 5 sec in the user simulation mode to display the remaining life of the photoconductor cartridge in 3 digits x 2 lines on the copy quantity display.



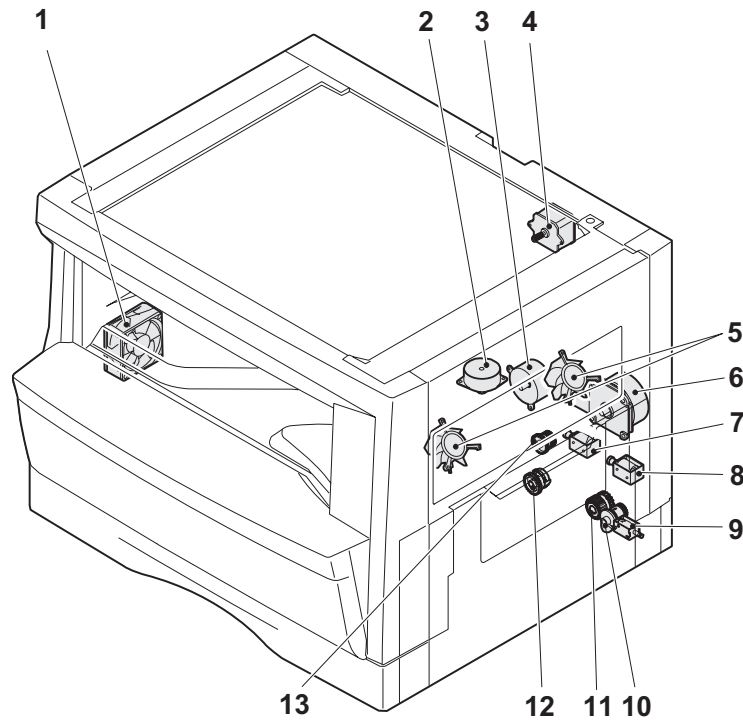
Paper required indicator



Misfeed indicator



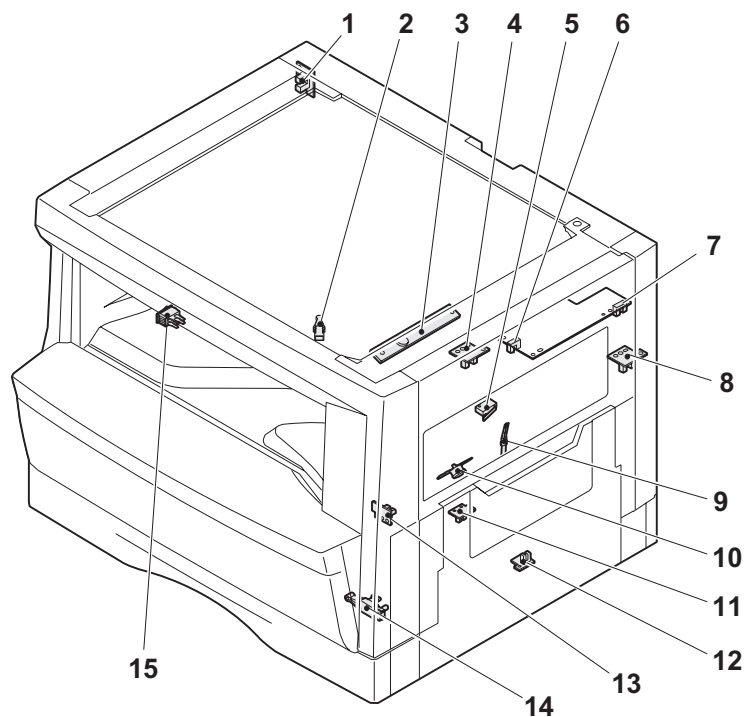
#### 4. Motor, solenoid, clutch



No.	Name	Code	Function, operation
1	Exhaust fan motor	VFM	Cools the inside of the machine.
2	Shifter motor		Shifts the paper exit tray. (AR-161)
3	Toner motor	TM	Toner supply
4	Mirror motor	MRM	Drives the optical mirror base (scanner unit).
5	Cooling fan motor	CFM	Cools the inside of the machine.
6	Main motor	MM	Drives the machine.
7	Paper feed solenoid	CPFS1	Solenoid for paper feed from cassette
8	Resist roller solenoid	RRS	Resist roller rotation control solenoid
9	Manual paper feed solenoid	MPFS	Manual paper feed solenoid
10	Manual paper transport clutch	MPTC	Drives the manual paper transport roller.
11	Manual paper feed clutch	MPFC	Drives the manual paper feed roller.
12	Paper feed clutch	CPFC1	Drives the cassette paper feed roller.
13	PS clutch	RRC	Drives the resist roller



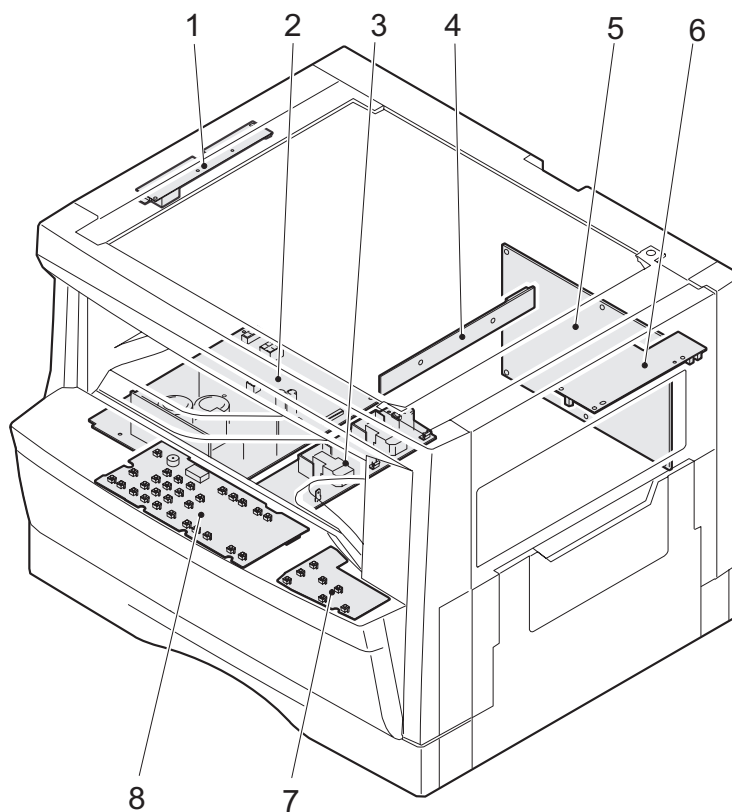
## 5. Sensor, switch



No.	Name	Code	Function, operation
1	Mirror home position sensor	MHPS	Detects the mirror (scanner unit) home position.
2	Cassette detection switch	CSD1	Cassette detection
3	Toner density sensor	TCS	Toner quantity detection
4	Paper exit sensor (paper exit side)	POD1	Detects paper exit.
5	Right door switch	DSWR	Side door open/close detection
6	Paper full sensor		Paper exit tray section full detection <For JOB separator>
7	Lift sensor		Paper feed tray lift up detection <For JOB separator>
8	Paper exit sensor (DUP side)	POD2	Paper transport detection
9	Thermistor		Fusing section temperature detection
10	Thermostat		Fusing section abnormally high temperature detection
11	Paper transport sensor	PPD	Paper transport detection
12	Manual sensor	MPED	Manual transport detection
13	Cassette paper sensor	PED1	Cassette paper empty sensor
14	Drum reset switch	DRST	New drum detection switch
15	Power switch	MAIN SW	Turns ON/OFF the main power source.



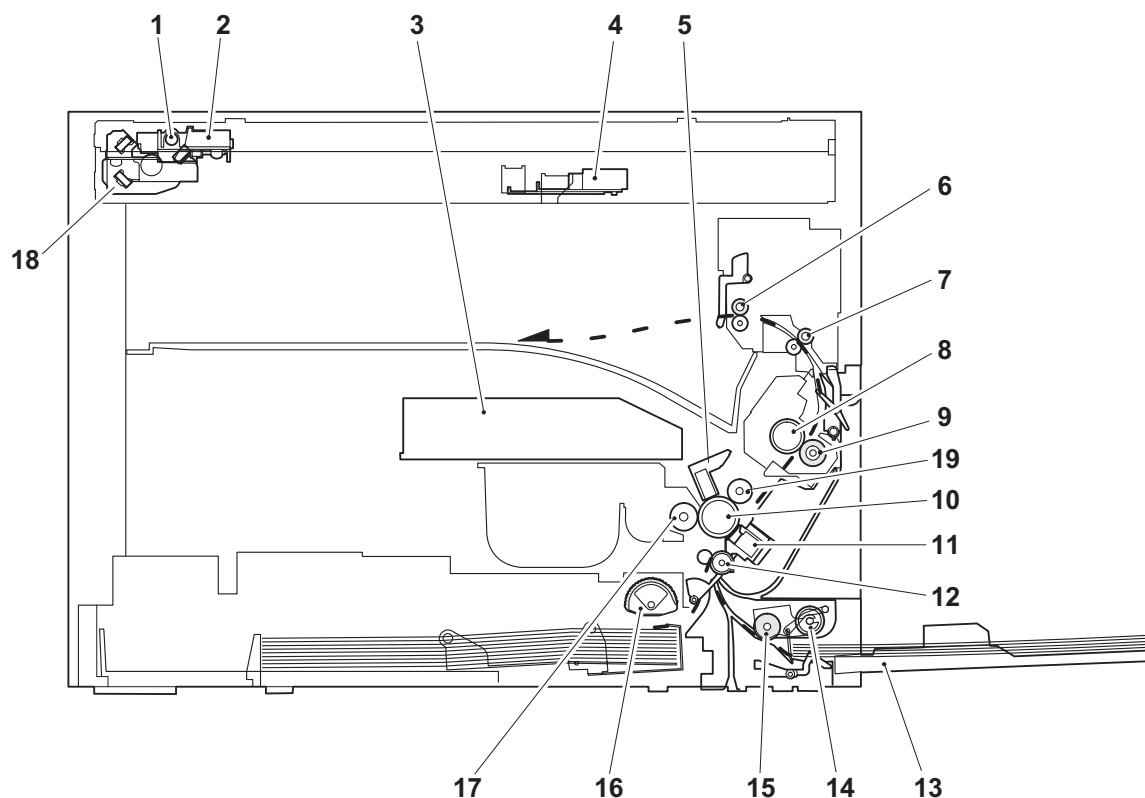
## 6. PWB unit



No.	Name	Function, operation
1	Copy lamp inverter PWB	Copy lamp control
2	Power PWB	AC power input/DC power control
3	High voltage PWB	High voltage control
4	CCD sensor PWB	Image scanning
5	Main PWB (MCU)	Machine control/Image process
6	Paper exit interface PWB	Paper exit, finishing control
7	Electronic sort function	Operation panel input/Display
8	Operation main PWB	Operation panel input/Display, operation panel section control



## 7. Cross sectional view



No.	Name	Function/Operation
1	Copy lamp	Image radiation lamp
2	Copy lamp unit	Operates in synchronization with No. 2/3 mirror unit to radiate documents sequentially.
3	LSU unit	Converts image signals into laser beams to write on the drum.
4	Lens unit	Reads images with the lens and the CCD.
5	MC holder unit	Supplies negative charges evenly on the drum.
6	Paper exit roller	Used to discharge paper.
7	Transport roller	Used to transport paper.
8	Upper heat roller	Fuses toner on paper (with the teflon roller).
9	Lower heat roller	Fuses toner on paper (with the silicon rubber roller).
10	Drum unit	Forms images.
11	Transfer charger unit	Transfer images (on the drum) onto paper.
12	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
13	Manual paper feed tray	Manual paper feed tray
14	Manual paper feed roller	Picks up paper in manual paper feed.
15	Manual transport roller	Transports paper from the manual paper feed port.
16	Paper feed roller (semi-circular roller)	Picks up paper from the cassette.
17	MG roller	Puts toner on the OPC drum.
18	No. 2/3 mirror unit	Reflects the images from the copy lamp unit to the lens unit.
19	Waste toner transport roller	Transports waste toner to the waste toner box.



## [5] UNPACKING AND INSTALLATION

### 1. Installation of machine

#### A. Installing conditions

Since the machine performance is largely affected by the installing place conditions, take enough considerations on the following items

##### 1) Environment

- Avoid installation at a place with direct sunlight. If not, the plastic parts may be deformed.
- Avoid installation near a heater, a humidifier, or an air conditioner where humidity and temperature are extremely high or low. If not, paper may be dampened and dew is formed inside the machine, causing paper jam or dirty copies.
- Avoid installation at a dusty place. If dust enters the machine, dirty copy or a trouble may be caused.
- Avoid installation at a place with vibrations. If not, a machine trouble may be caused.
- Avoid installation at a poorly ventilated place.
- Avoid installation at a place that is filled with ammonium gas. If the copier is installed near a diazo-copier, dirty copies may be resulted.

##### 2) Space around the copier

- Allow a space of more than between the copier rear side and the wall.

##### 3) Power source

- Use an exclusive-use power outlet of 15A and 100V or more. If the power plug of this machine is inserted into a power outlet commonly used with other illumination units, flickers of the lamp may be resulted. Use a power outlet which is not used commonly with any illumination units.
- Avoid complex wiring.

##### 4) Grounding wire connection.

- To avoid danger, be sure to connect a grounding wire. If no grounding wire is connected and a leakage occurs, a fire or an electric shock may be resulted.

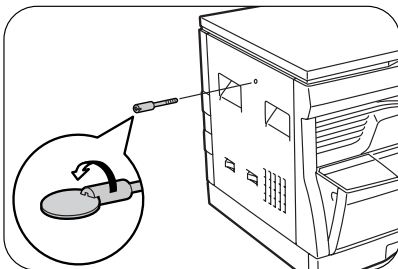
### 2. Removal of protective material and fixing screw

#### 1) Remove all tapes and protective material.

- Remove all tapes, then open the document cover and remove the protective material of sheet shape

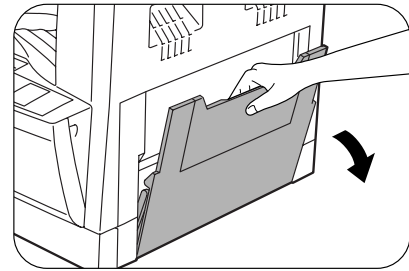
#### 2) Remove the fixing screw.

- Use a coin to remove the fixing screw.
- The fixing screw is required when transporting the machine. Keep it in the tray. (Refer to the later description.)

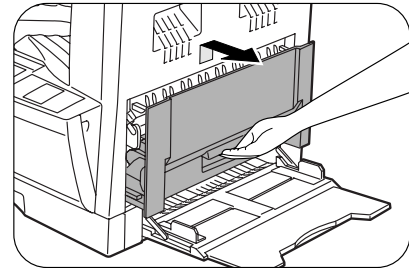


### 3. Installation of developing cartridge

#### 1) Open the manual paper feed tray.

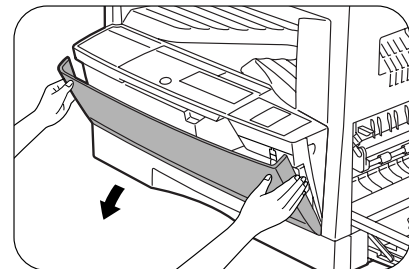


#### 2) Lift the knob and slide the side cover gently.

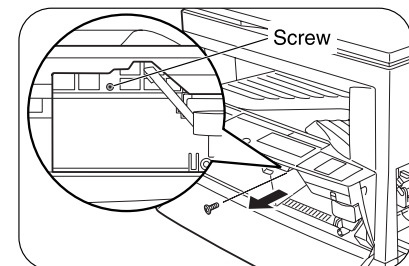


#### 3) Open the front cover.

- Hold the both edge gently and open the front cover.

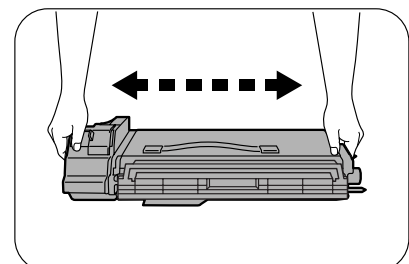


#### 4) Remove the screw from the upper section of the insertion port of the developer cartridge.



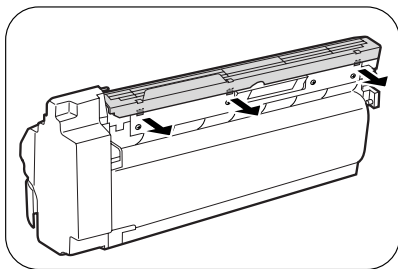
#### 5) Shake a new developer cartridge a few times as shown.

- Shake it horizontally as shown with the arrow.



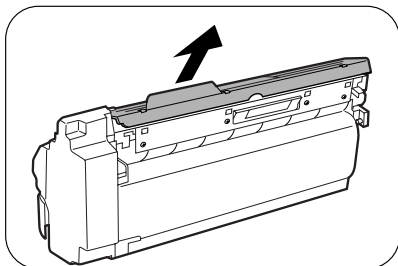


- 6) Remove the pawls (3 positions) of the protective cover at therear side.



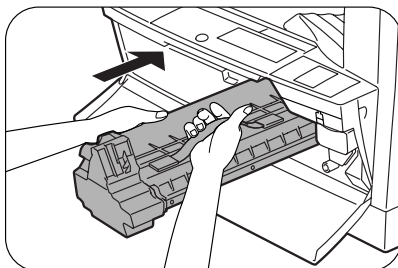
- 7) Remove the protective cover.

- Pull the cover in the arrow direction to remove.

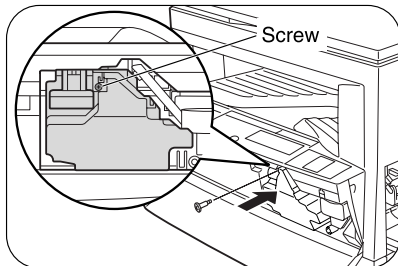


- 8) Insert the developer cartridge.

- Gently insert the developer cartridge along the guide until it locks.

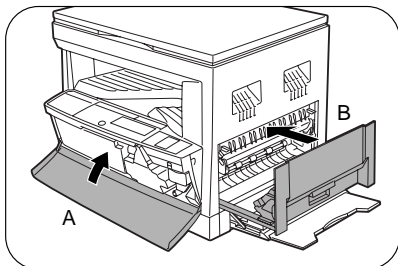


- 9) Fix the developer cartridge with the fixing screw which is packed together with the machine.



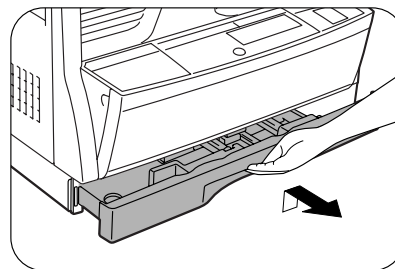
- 10) Close the front cover A, then close the side cover B.

- When closing the front cover, gently press the both sides.
- When closing the side cover, hold the knob.
- When closing the covers, be sure to close the front cover first, then close the side cover. If closed in a wrong sequence, the covers may be broken.

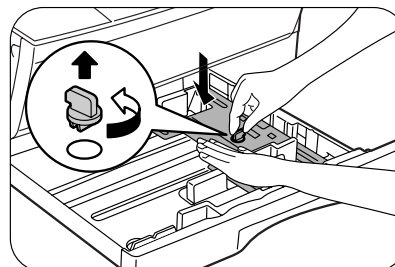


## 4. Removal and storage of fixing screw

- 1) Lift the knob and gently pull out the tray.

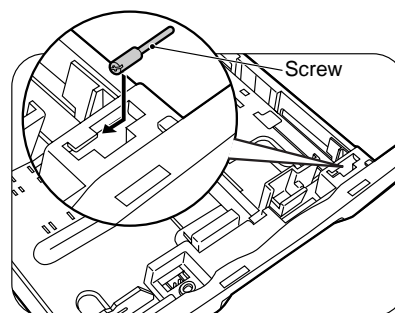
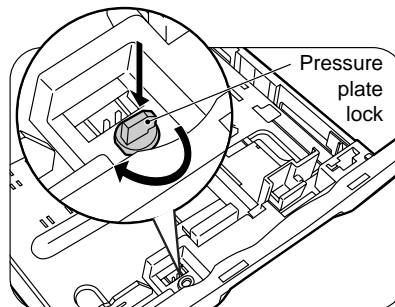


- 2) Hold the paper pressure plate and turn the fixing screw in the arrow direction.



- 3) Store the fixing pin and the fixing screw in the tray.

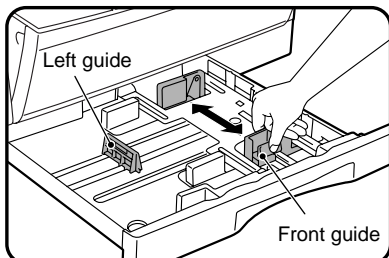
- Store the fixing screw which was removed in the above procedure 2 and the fixing screw which was removed in procedure 2 of 2.
- Removal of protective material and fixing screw in the storage place in the tray.



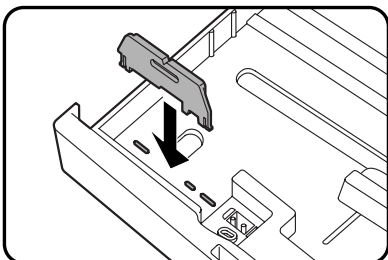


## 5. Changing the copy paper size in the tray

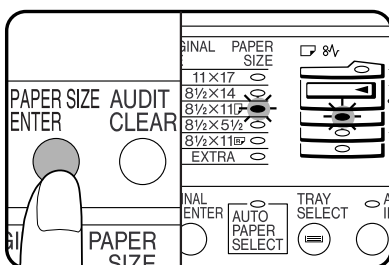
- 1) Gently lift and pull out the paper tray until it stops.
- 2) Push the pressure plate down until it locks in place.
- 3) Squeeze the lock lever of the front guide and slide the front guide to match the width of the paper.



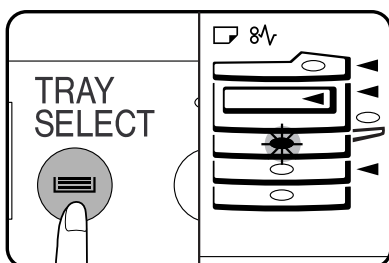
- 4) Move the left guide to the appropriate slot as marked on the tray.
  - When using 11" x 17" copy paper, store the left guide in the slot at the left front of the paper tray.



- 5) Load copy paper into the tray.
- 6) Place the paper size plate in the front of the paper tray.
  - The paper size indication which shows through the slot on the front of the copier should match the selected paper size.
- 7) Push the paper tray firmly back into the copier.
- 8) To set the selected paper size, press and hold down the PAPER SIZE ENTER key. The selected paper feed location indicator and the corresponding paper size (which has been set) indicator will blink. All other indicators will go out.
  - For paper size setting, ensure that the COPY mode has been selected. However, if printer or facsimile output is being performed, paper size setting cannot be made even in the COPY mode.

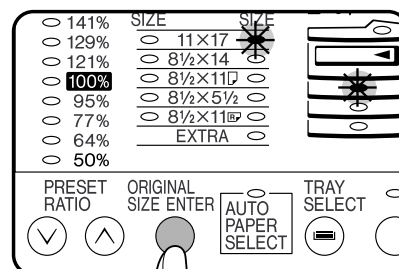


- 9) Use the TRAY SELECT key to select the paper tray of which the paper size has been changed.
  - Each time the TRAY SELECT key is pressed, a paper tray is indicated with a blinking paper feed location indicator. If an optional paper feed unit is not installed, this operation is not needed.

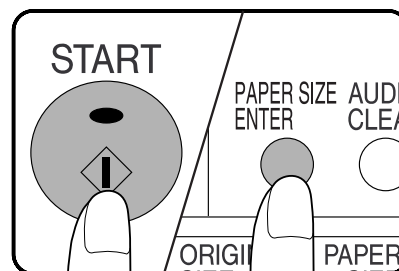


- 10) Use the ORIGINAL SIZE ENTER key to select the paper size which is set.

- Each time the ORIGINAL SIZE ENTER key is pressed, a paper size will be indicated with a blinking paper size indicator.



- 11) Press the START key and then the PAPER SIZE ENTER key.
  - To change the paper size setting of another tray, repeat steps 9 to 10 after pressing the START key.



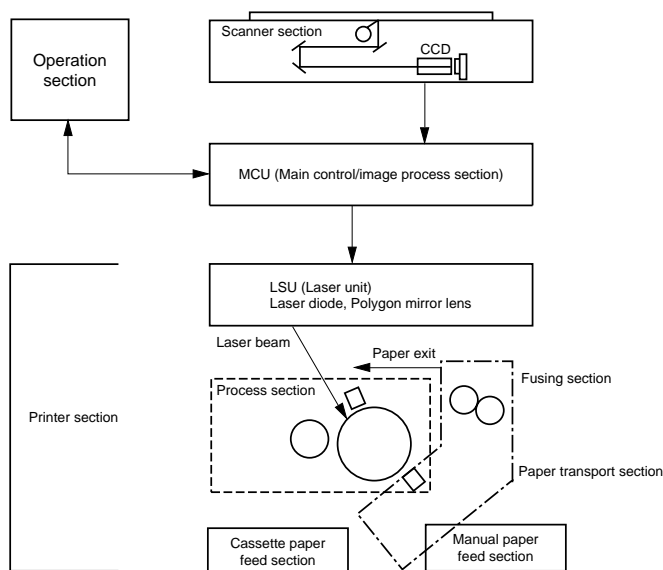


## [6] OPERATIONAL DESCRIPTIONS

### 1. Outline of operation

The outline of operation is described referring to the basic configuration.

#### (Basic configuration)



#### Outline of copy operation

##### A. Setting conditions: Operation panel

- Set copy conditions such as the copy quantity and the copy density with the operation section, and press the START key. The information on copy conditions is sent to the MCU.

##### B. Image scanning: Scanner section

- When the START key is pressed, the scanner section starts scanning of images. The light from the copy lamp is reflected by the document and passed through the lens to the CCD.

##### C. Photo signal/Electric signal conversion: Scanner section

- The image is converted into electrical signals by the CCD circuit and passed to the MCU.

##### D. Image process: MCU

- The document image signal sent from the CCD circuit is processed under the revised conditions and sent to the LSU (laser unit) as print data.

##### E. Electric signal/Photo signal (laser beam) conversion: LSU

- The LSU emits laser beams according to the print data. (Electrical signals are converted into photo signals.)
- The laser beams are radiated through the polygon mirror and various lenses to the OPC drum.

##### F. Printing: Process section

- Electrostatic latent images are formed on the OPC drum according to the laser beams, and the latent images are developed to be visible images (toner images).
- Meanwhile the paper is fed to the image transfer section in synchronization with the image lead edge.
- The toner image is transferred on the paper.

### G. Fusing: Fusing section

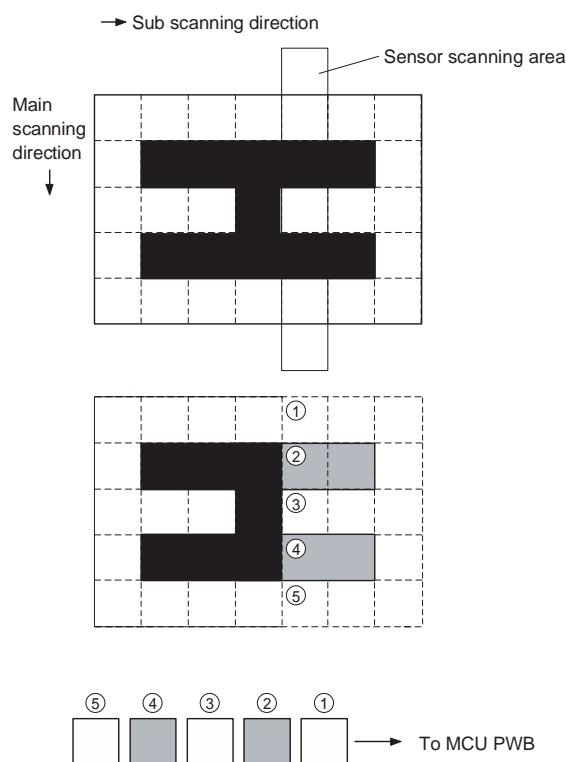
- Heat and a pressure are applied to the toner image on the copy paper to fuse the image on the paper.

### 2. Scanner section

#### A. Scan process

The scanner has sensors that are arranged in a line. These sensors scan a certain area of a document at a time and deliver outputs sequentially. When the line is finished, the next line is scanned, and this procedure is repeated. The figure below shows the case where an image which is scanned is shown with solid lines.

The direction of this line is called main scanning direction, and the scanning direction sub scanning direction. In the figure above, one line is divided into 5 sections. Actually, however, one line is divided into thousands of sections. For scanning, the light receiving element called CCD is used.



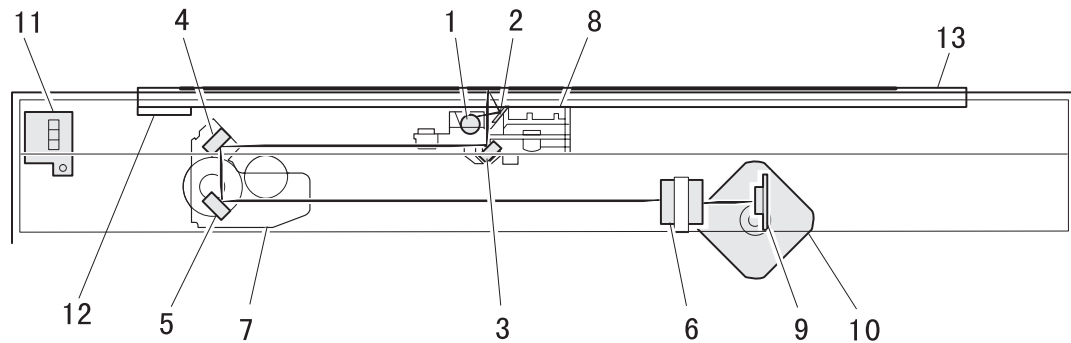
The basic resolution indicates the scanner capacity. The basic resolution is expressed in dpi (dot/inch) which shows the number of light emitting elements per inch on the document.

The basic resolution of this machine is 400dpi.

In the sub scanning direction, at the same time, the motor that drives the optical system is controlled to scan the image at the basic resolution.



## B. Basic structure of scanner section

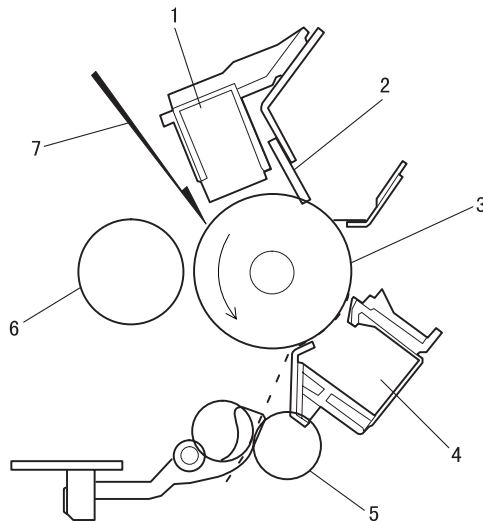


1	Copy lamp (Xenon lamp)	Generate photo energy to scan documents.
2	Reflector (Converging plate)	Collects light emitted from the copy lamp and radiate the document.
3	No. 1 mirror	Refracts the reflection light from the document to No. 2 mirror.
4	No. 2 mirror	Refracts the reflection light from No. 1 mirror.
5	No. 3 mirror	Refracts the reflection light from No. 2 mirror.
6	Lens	Converges reflected light from the document to form images on the CCD element.
7	No. 2/3 mirror unit	Includes No. 2/3 mirror. Driven in synchronization with the copy lamp unit.
8	Copy lamp unit	Includes the copy lamp, the reflector, and No. 1 mirror. Driven in synchronization with No. 2/3 mirror unit by the mirror motor.
9	CCD PWB	Reflected light (image) formed on the CCD is converted into electrical signals (analog signals) then into digital signals and sent to the MCU.
10	Mirror motor	Drives the copy lamp unit and No. 2/3 mirror unit according to the scanning speed.
11	MHPS (Mirror home position sensor)	Detects the home position of No. 2/3 mirror unit.
12	Reference white plate	Reference white sheet for scanning documents. The reference line of magnification ratio adjustment during SIM is also drawn.
13	OC glass	Glass table to put a document on it.

The light from the light source (Xenon lamp) is reflected by a document and passed through three mirrors and reduction lenses to the CCD element (image sensor) where images are formed. This system is known as the reduction image sensor system. Photo energy on the CCD element is converted into electrical signals (analog signals). (Photo-electric conversion). The output signals (analog signals) are converted into digital signals (A/D conversion) and passed to the MCU (main control/image process section). The resolution at that time is 400dpi. The mirror unit in the scanner section is driven by the mirror motor. The MHPS is provided to detect the home position of the copy lamp unit.

## 3. Process section

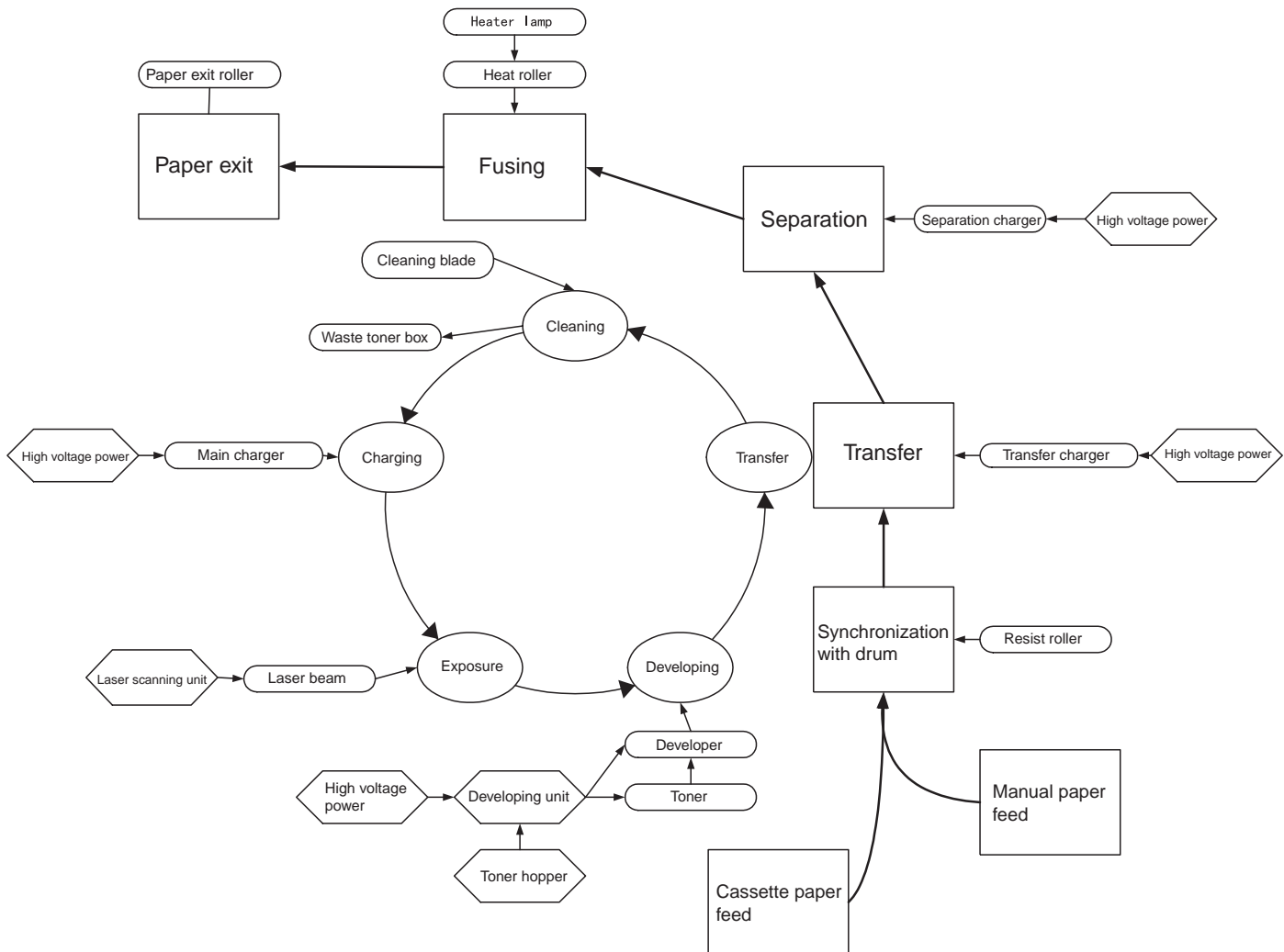
### A. Basic structure



1	Main charger unit	Charges the OPC drum.
2	Cleaning blade	Collects waste toner on the OPC drum.
3	OPC drum	Images are formed by laser beams electrically, and toner is attached to the image.
4	Transfer unit	Toner on the OPC drum is transferred to the print paper by the potential difference.
5	Resist roller	Makes synchronization between the paper and the print image.
6	MG roller	Magnetic brush is formed by developer to put toner on the OPC drum.
7	(Laser beam)	Forms images on the OPC drum.



## Operation cycle



### B. Outline of print process

The printer section of this machine employs the laser print system where print images are formed by the laser beams on the OPC drum. A high voltage (corona) is applied from the main charger to the OPC drum to charge the OPC drum.

Laser beams are radiated to the charged OPC drum to form electrical images on the OPC drum. (Exposure)

(At that time, the print image on the OPC drum cannot be seen: latent electrostatic image)

By the potential difference between the unexposed area and the latent electrostatic images, toner is attracted only to the images. (Developing)

(At that time, the print image formed by toner on the OPC drum can be seen. Visible images)

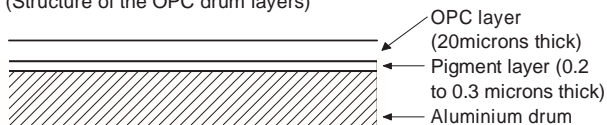
The toner image on the OPC drum is transferred on the print paper by the transfer corona (voltage).

After that, the print paper with the toner image on it is subject to heat and pressure in the fusing section to fuse the image on the paper.

This machine employs the following organic photoconductor (OPC) drum.

An OPC drum is used for the photoconductor.

(Structure of the OPC drum layers)

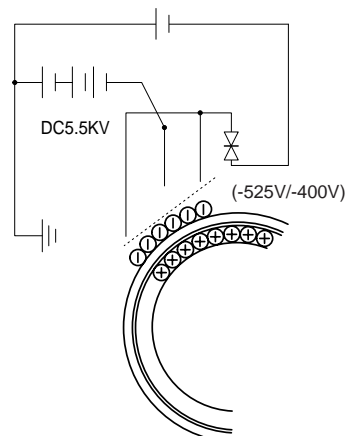


### C. Actual print process

#### (1) Charging

A high voltage is applied to the main charger, and negative charges are discharged to the OPC drum. A screen grid is provided between the main charger and the OPC drum, and negative charges are uniformly charged on the OPC drum surface.

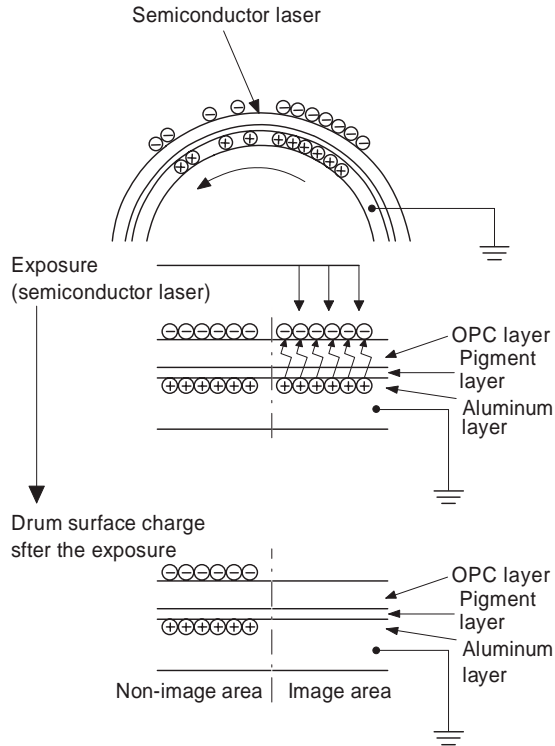
Positive charges are attracted by the negative electrode on the OPC drum surface and excited in the aluminum layer in the OPC drum.





## (2) Exposure

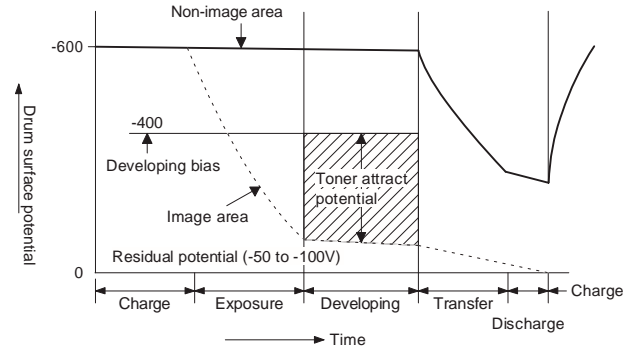
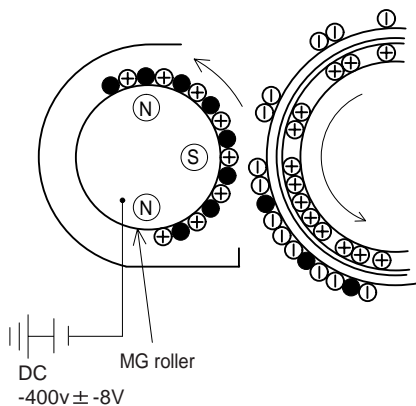
A Laser beam is generated from the semiconductor laser and controlled by the print pattern signal. The laser writes onto the OPC drum surface through the polygon mirrors and lens. The resistance of the OPC layer decreases for an area exposed by the laser beam (corresponding to the print pattern signal). The beam neutralizes the negative charge. An electrostatic latent image is formed on the drum surface.



## (3) Developing (DC bias)

A bias potential is applied to the MG roller in the two component magnetic brush developing method, and the toner is charged negative through friction with the carrier. Non-image area of the drum surface charged with negative potential repel the toner, whereas the laser exposed portions where no negative charges exist, attract the toner. As a result, a visible image appears on the drum surface.

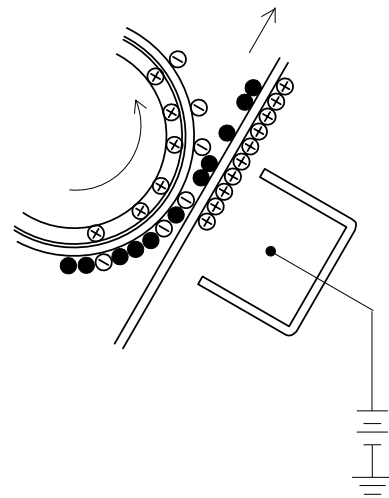
- ⊕ : Carrier (Magnetized particle)
- : Toner (Charge negative by friction)
- (N) (S) : Permanent magnet (provided in three locations)



Toner is attracted over the shadowed area because of the developing bias.

## (4) Transfer

The visible image on the drum surface is transferred onto the print paper by applying a positive charge from the transfer corona to the backside of the print paper.

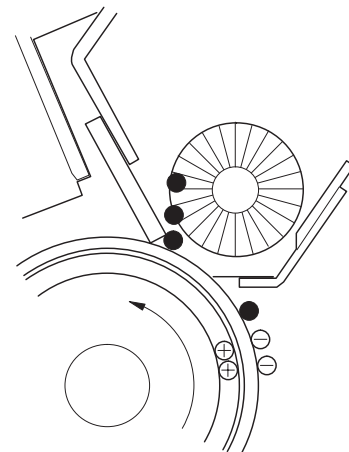


## (5) Separation

Since the print paper is charged positively by the transfer corona, it is discharged by the separation corona. The separation corona is connected to ground.

## (6) Cleaning

Toner remaining on the drum is removed and collected by the cleaning blade. It is transported to the waste toner collecting section in the cleaning unit by the waste toner transport roller.

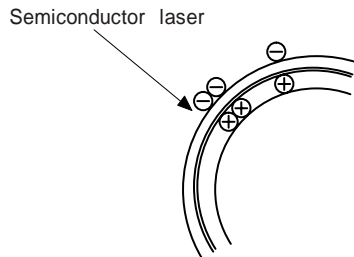




## (7) Optical discharge (Semiconductor laser)

Before the drum rotation is stopped, the semiconductor laser is radiated onto the drum to reduce the electrical resistance in the OPC layer and eliminate residual charge, providing a uniform state to the drum surface for the next page to be printed.

When the electrical resistance is reduced, positive charges on the aluminum layer are moved and neutralized with negative charges on the OPC layer.



### a. Charge by the Scorotron charger

#### <1> Function

The Scorotron charger functions to maintain the surface potential of the drum even at all times which. It is used to control the surface potential regardless of the charge characteristics of the photoconductor.

#### <2> Basic function

A screen grid is placed between the saw tooth and the photoconductor. A stable voltage is added to the screen grid to maintain the corona current on the photoconductor. As the photoconductor is charged by the saw tooth from the main corona unit, the surface potential increases. This increases the current flowing through the screen grid. When the photoconductor potential nears the grid potential, the current turns to flow to the grid so that the photoconductor potential can be maintained at a stable level.

### b. Process controlling

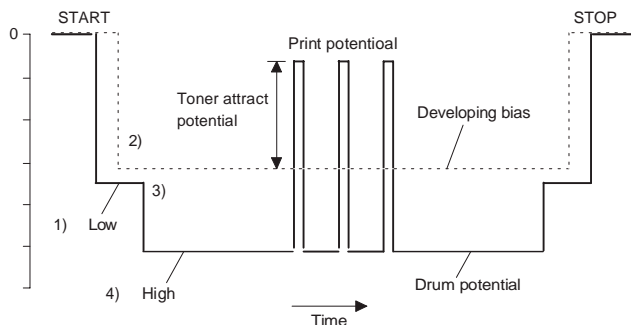
#### <1> Function

The print pattern signal is converted into an invisible image by the semiconductor laser using negative to positive (reversible) developing method. Therefore, if the developing bias is added before the drum is charged, toner is attracted onto the drum. If the developing bias is not added when the drum is charged, the carrier is attracted to the drum because of the strong electrostatic force of the drum.

To avoid this, the process is controlled by adjusting the drum potential and the grid potential of the Scorotron charger.

#### <2> Basic function

Voltage added to the screen grid can be selected, high and low. To make it easily understood, the figure below shows voltage transition at the developer unit.



#### <3> Start

- 1) Because the grid potential is at a low level, the drum potential is at about  $-400V$ . (Carrier may not be attracted though the carrier is pulled towards the drum by the electrostatic force of  $-400V$ .)
- 2) Developing bias ( $-400V$ ) is applied when the photoconductor potential is switched from LOW to HIGH.
- 3) Once developing bias ( $-400V$ ) is applied and the photo conductor potential rises to HIGH, toner will not be attracted to the drum.

#### <4> Stop

The reverse sequence takes place.

### c. Retaining developing bias at an abnormal occurrence

#### <1> Function

The developing bias will be lost if the power supply was removed during print process. In this event, the drum potential slightly abates and the carrier makes deposits on the drum because of strong static power. To prevent this, the machine incorporates a function to retain the developing bias for a certain period and decrease the voltage gradually against possible power loss.

#### <2> Basic function

Normally, the developing bias voltage is retained for a certain time before the drum comes to a complete stop if the machine should stop before completing the normal print cycle. The developing bias can be added before resuming the operation after an abnormal interruption. Therefore, carrier will not make a deposit on the drum surface.

## 4. Laser unit

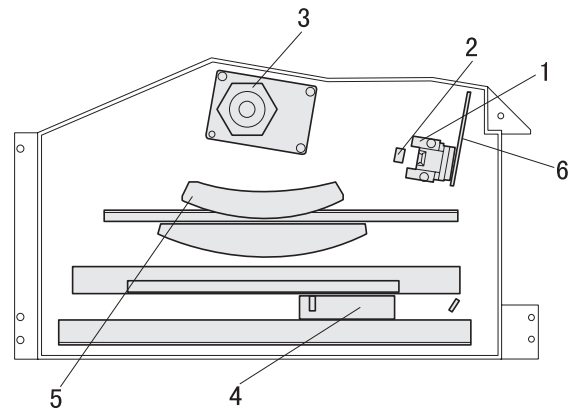
The image data sent from the MCU (image process circuit) is sent to the LSU (laser unit), where it is converted into laser beams.

### A. Basic structure

The LSU unit is the writing section of the digital optical system.

The semiconductor laser is used as the light source, and images are formed on the OPC drum by the polygon mirror and f $\theta$  lens, etc.

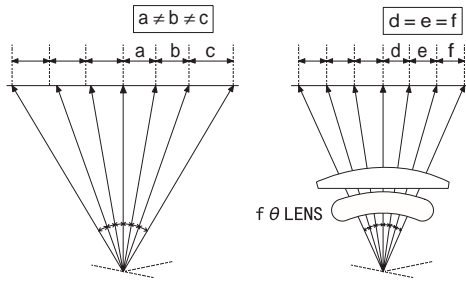
The laser beams are passed through the collimator lens, the cylindrical lens, the polygon mirror, the f $\theta$  lens, and the mirror to form images on the OPC drum in the main scanning direction. The laser emitting PWB is provided with the APC (auto power control) in order to eliminate fluctuations in the laser power. The BD PWB works for measurement of the laser writing start point.



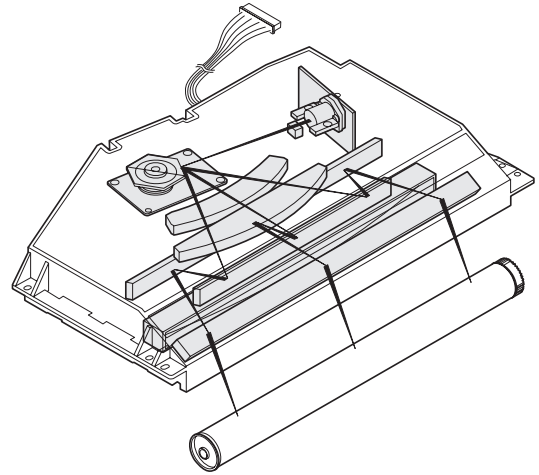
1	Semiconductor laser	Generates laser beams
2	Collimator lens	Converges laser beams in parallel
3	Polygon mirror, polygon motor	Reflects laser beams at a constant rpm
4	BD (Mirror, lens, PWB)	Detects start timing of laser scanning
5	f $\theta$ lens	Converges laser beams at a spot on the drum. Makes the laser scanning speeds at both ends of the drum same as each other. (Refer to the figure below.)
6	Laser emitting PWB	Emits laser beams according to the image data.



Makes the laser scanning speeds at both ends of the drum same as each other.

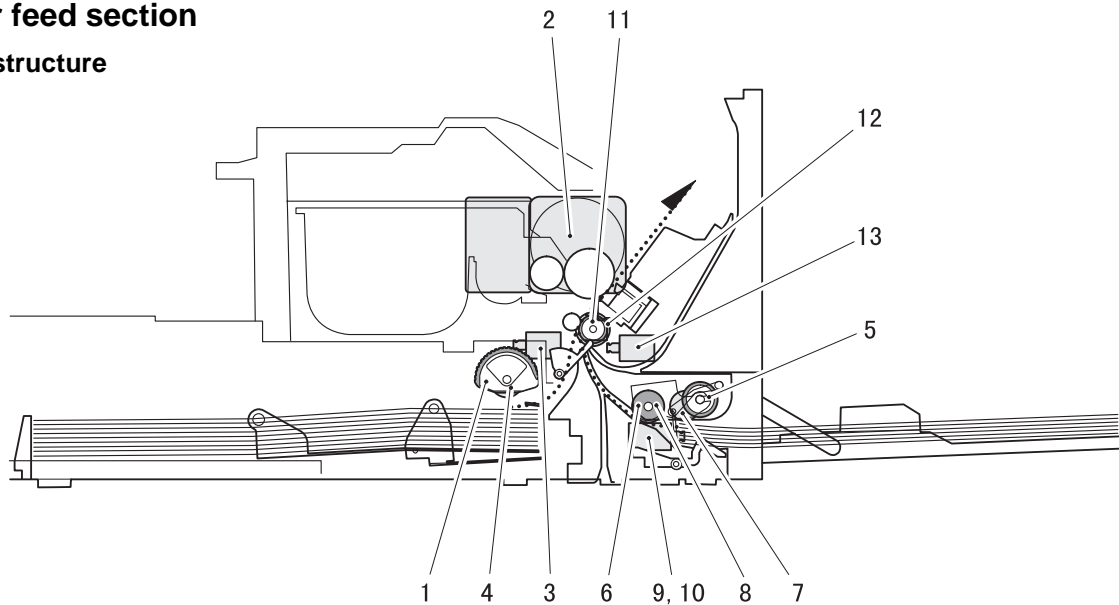


## B. Laser beam path



## 5. Paper feed section

### A. Basic structure



1	No. 1 cassette paper feed roller (Semi-circular roller)	Picks up paper from No. 1 cassette.
2	Main motor	Drives the process section and the paper transport section.
3	No. 1 cassette paper feed solenoid	Rotates and controls No. 1 cassette paper feed roller.
4	No. 1 cassette paper feed roller clutch	Drives No. 1 cassette paper feed roller.
5	Manual paper feed roller	Picks up paper from the manual paper feed tray.
6	Manual paper transport roller	Transport paper which was picked up from the manual paper feed tray.
7	Manual paper feed roller clutch	Drives the manual paper feed roller.
8	Manual paper transport roller clutch	Drives the manual paper transport roller.
9	Manual paper feed roller solenoid	Rotates and controls the manual paper feed roller.
10	Manual paper transport roller solenoid	Rotates and controls the manual paper transport roller.
11	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
12	Resist roller clutch	Drives the resist roller.
13	Resist roller solenoid	Rotates and controls the resist roller.

### B. Brief descriptions of operations

This machine allows two ways of paper feed system: cassette paper feed and manual paper feed.

The cassette of universal type is employed to hold 250 sheets. The front loading system allows to attach or detach the cassette from the front of the machine.

Paper size can be selected by the user.

Paper size detection is set by the software. (User setting is allowed.)

By installing the optional 1-step paper feed unit or the multi-step paper feed unit, the capacity of paper can be increased.

#### (1) Cassette paper feed operation

Select the cassette and press the START button, and the paper feed roller solenoid will be turned on and the paper feed clutch will be released.

The drive power of the main motor is transmitted through the paper feed roller clutch to the paper feed roller, rotating the paper feed roller and feeding paper.



## (2) Manual paper feed tray operation

Select the manual paper feed tray and press the START button, and the manual paper feed roller will be turned on to bring the paper feed roller in contact with paper and lift the shutter simultaneously.

The drive power of the main motor is transmitted through the manual paper feed roller clutch to the manual paper feed roller, rotating the manual paper feed roller and feeding paper.

## (3) Resist roller

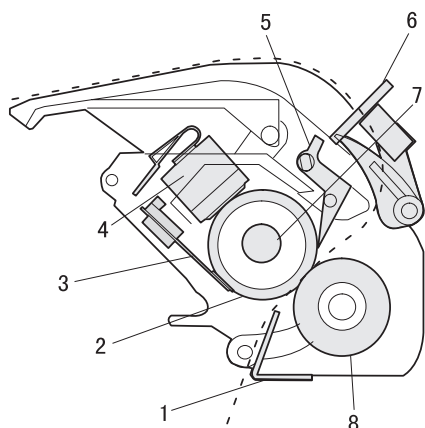
In order to make synchronization between the paper lead edge fed from the paper feed port and the image lead edge, the roller is kept stationary for a certain time after the paper reaches at the roller to warp the paper a little.

When the paper is warped to a certain level, the resist roller solenoid is turned on to release the resist roller clutch.

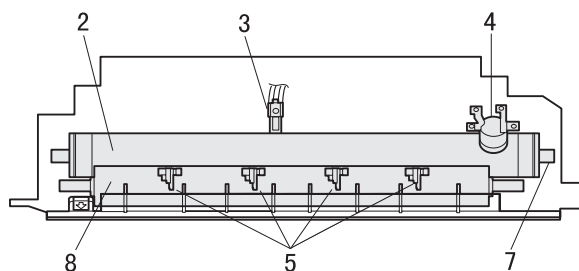
The drive power of the main motor is transmitted through the resist roller clutch to the resist roller, rotating the resist roller and feeding paper.

# 6. Fusing section

## A. Basic composition



(Top view)



1	Before-fusing paper guide	Guides the paper transported from the process section to the fusing unit.
2	Upper heat roller	Applies heat and pressure to the paper to fuse.
3	Thermistor	Detects the surface temperature of the upper heat roller.
4	Thermostat	Stops power supply to the heat roller in case of an abnormally high temperature of the heat roller.
5	Separation pawl	Separates the print paper from the upper heat roller.
6	POD1	Detects that the paper has been transported from the fusing section.
7	Heater lamp	Heats the heat roller.
8	Lower heat roller	Applies a pressure to the paper together with the upper heat roller.

## B. Heat roller

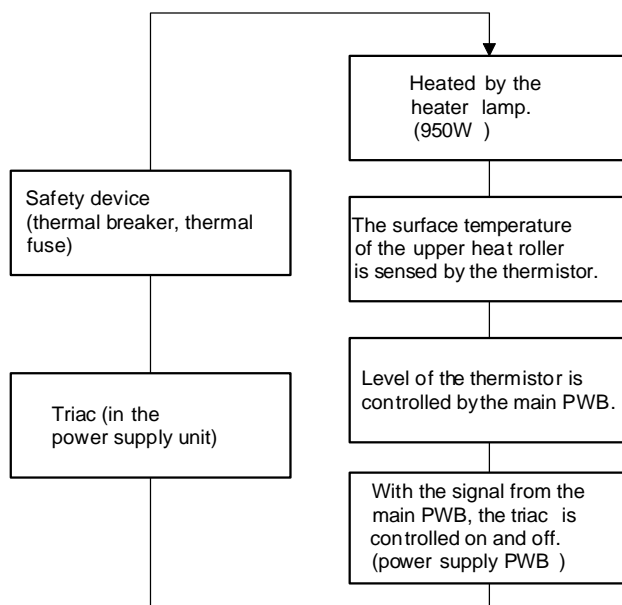
A pressure roller is used for the heat roller and a silicone rubber roller is used for the lower heat roller for better toner fusing performance and paper separation.

## C. Separator pawl

Four separator pawls are used on the upper heat roller. The separator pawls are teflon coated to reduce friction with the roller and prevent a smear on the paper caused by the separator pawl.

## D. Thermal control

- 1) The heater lamp, thermistor, main PWB, DC power supply PWB, and triac within the power supply unit are used to control the temperature in the fuser unit. To prevent against abnormally high temperature in the fuser unit, a thermostat is used for safety purposes.



- 2) The surface temperature of the upper heat roller is set to 180°C ~ 195°C. The surface temperature during the power save mode is set to 100°C.
- 3) The self-check function comes active when one of the following malfunctions occurs, and an "H" is displayed on the copy quantity display.

Fusing temperature error value

H4 (Low temperature error)

- During machine operation

The case where the fusing temperature (thermistor output value) does not reach 155°C within 55 sec from lighting of the heater lamp. (If the toner motor rotates for 10 sec or more continuously when starting the machine, the case where the fusing temperature does not reach 155°C within 60 sec.)

- During printing

When the fusing temperature (thermistor output value) falls below 145°C.

H3 (High temperature error)

Fusing temperature (thermistor output value) of about 220 to 240°C (varies depending on the resistance.)

## E. Fusing resistor

### (1) Fusing resistor

Since the upper heat roller is conductive when copy paper is highly moistured and the distance between the transfer unit and the fusing unit is short, the transfer current leaks through the copy paper, the upper heat roller and the discharging brush.

To prevent against this, a resistor of 150MOhm is provided between the frame and the discharge brush to minimize leak current and improve transfer efficiency.



## [7] ADJUSTMENTS

### 1. Adjustment item list

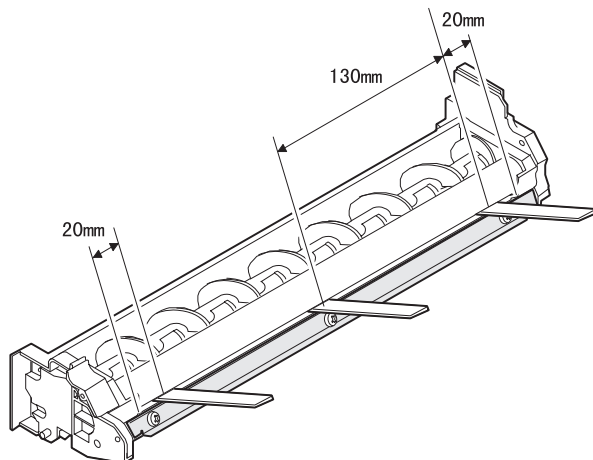
Section		Adjustment item		Adjustment procedure/SIM No.	
A	Process section	(1)	Developing doctor gap adjustment		Developing doctor gap adjustment
		(2)	MG roller main pole position adjustment		MG roller main pole position adjustment
		(3)	Developing bias voltage output adjustment		SIM 8-1
		(4)	Main charger voltage output adjustment		SIM 8-2/SIM 8-3
		(5)	Transfer charger current adjustment		SIM 8-6
B	Mechanism section	(1)	Image position adjustment		SIM 50-1/SIM 50-10
		(2)	Main scanning direction (FR direction) distortion balance adjustment		No. 2/3 mirror base unit installing position adjustment
					Copy lamp unit installing position adjustment
		(3)	Main scanning direction (FR direction) distortion adjustment		F rail height adjustment
		(4)	Sub scanning direction (scanning direction) distortion adjustment		Winding pulley position adjustment
		(5)	Main scanning direction (FR direction) magnification ratio adjustment		SIM 48-1
		(6)	Sub scanning direction (scanning direction) magnification ratio adjustment	a	OC mode in copying (SIM 48-2)
				b	SPF mode in copying (SIM 48-5)
				c	OC mode in FAX (SIM 48-6)
				d	SPF mode in FAX (SIM 48-7)
		(7)	Off center adjustment	a	OC mode (SIM 50-13)
				b	SPF mode (SIM 50-16)
		(8)	Document size detection sensor		SIM 41-2
C	Image density adjustment	(1)	Copy mode		SIM 46-1

### 2. Copier adjustment

#### A. Process section

##### (1) Developing doctor gap adjustment

- Loosen the developing doctor fixing screw A.
- Insert a thickness gauge of 1.5mm to the three positions at 20mm and 130mm from the both ends of the developing doctor as shown.



- Push the developing doctor in the arrow direction, and tighten the developing doctor fixing screw. (Perform the same procedure for the front and the rear frames.)
- Check the clearance of the developing doctor. If it is within the specified range, then fix the doctor fixing screw with screw lock.
- \* When inserting a thickness gauge, be careful not to scratch the developing doctor and the MG roller.

##### <Adjustment specification>

Developing doctor gap

Both ends (20mm from the both ends):  $1.5 \pm 0.1\text{mm}$

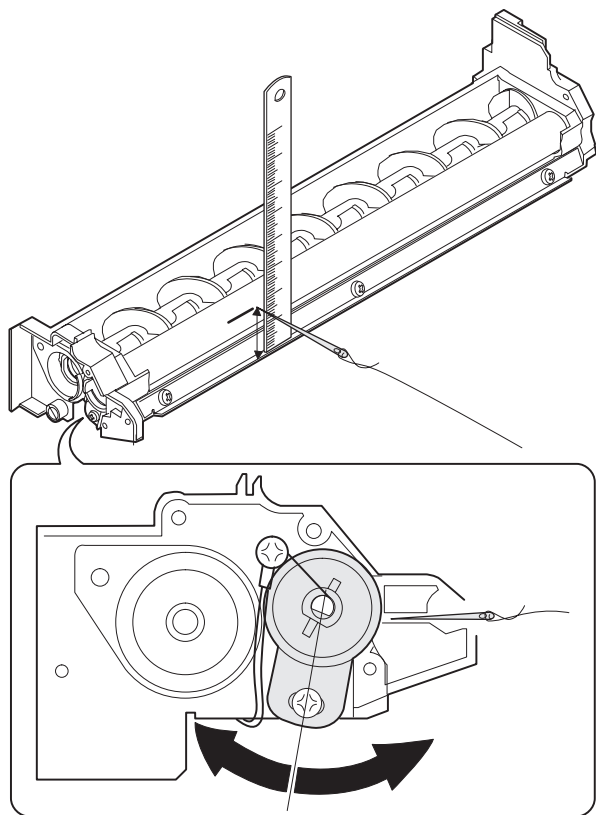
C (Center) (130mm from the both ends):  $1.5 \pm 0.1\text{mm}$

##### (2) MG roller main pole position adjustment

- Remove and separate the waste toner box and put the developing unit on a flat surface.
- Tie a string to a needle or a pin.
- Hold the string and bring the needle close to the MG roller horizontally. (Do not use paper clip, which is too heavy to make a correct adjustment.) (Put the developing unit horizontally for this adjustment.)
- Do not bring the needle into contact with the MG roller, but bring it to a position 2 or 3mm apart from the MG roller. Mark the point on the MG roller which is on the extension line from the needle tip.



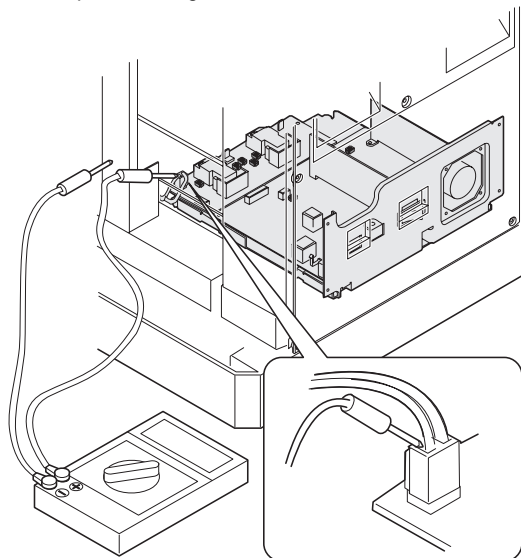
- 5) Measure the distance from the marking position to the top of the doctor plate of the developing unit to insure that it is 18mm. If the distance is not within the specified range, loosen the fixing screw A of the main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



### (3) Developing bias voltage adjustment (SIM 8-1)

Note: • Use a digital multi-meter with an internal resistance of 10MΩ or more.

- 1) Set the digital multi-meter range to DC700V.
- 2) Put the test rod of the digital multi-meter on the developing bias voltage output check pin.
- 3) Execute SIM 8-1. (The developing bias voltage is outputted for 30 sec.)
- 4) Adjust the adjustment volume VR31 so that the output voltage is within the specified range shown below.



### <Adjustment specification>

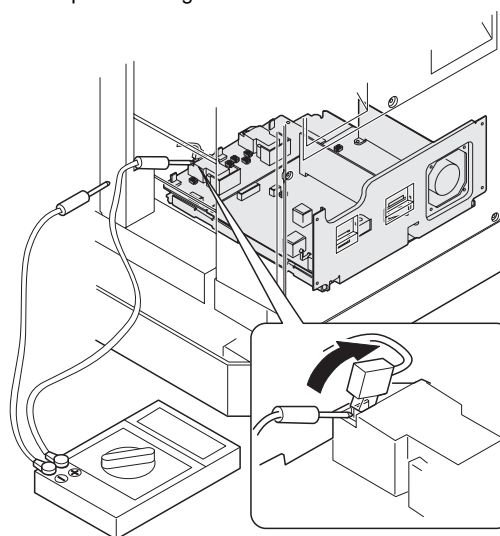
Mode	Specification	SIM	
Developing bias voltage	DC-400±8V	SIM 8-1	VR31

### (4) Grid bias voltage adjustment (SIM 8-2, SIM 8-3)

Note: • Use a digital multi-meter with an internal resistance of 10MΩ or more.

- First adjust the grid LOW output, then adjust the grid HIGH voltage.

- 1) Set the digital multi-meter range to DC700V.
- 2) Put the test rod of the digital multi-meter on the grid bias voltage output check pin.
- 3) Execute SIM 8-3. (The grid bias voltage is outputted in the grid bias LOW output mode for 30 sec.)
- 4) Adjust the adjustment volume VR52 so that the output voltage is within the specified range shown below.
- 5) Execute SIM 8-2. (The grid bias voltage is outputted in the grid bias HIGH output mode for 30 sec.)
- 6) Adjust the adjustment volume VR51 so that the output voltage is within the specified range shown below.



### <Adjustment specification>

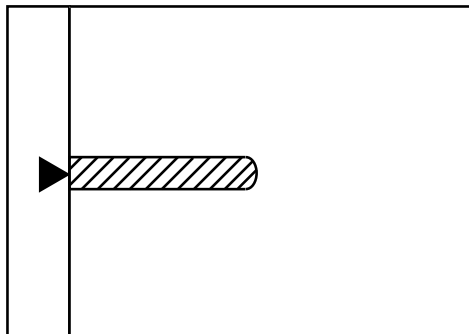
Mode	Specification	SIM	
Grid bias LOW	DC-400±20V	SIM 8-3	VR52
Grid bias HIGH	DC-525±10V	SIM 8-2	VR51

## B. Mechanism section

### (1) Image position adjustment (SIM 50-1/SIM 50-10)

#### a. Image lead edge position adjustment

- 1) Set a scale on the document table as shown below.



- 2) Make a copy.
- 3) Check the copy. If, necessary, perform the following adjustment procedure.
- 4) Execute SIM 50-1. Set AE (Laser radiation timing)/Lead edge void



value to 0. Make a copy (100%) again.

- 5) Set the laser radiation timing (image loss amount). Measure R in the figure below.

$$\text{Laser radiation timing} = R (\text{mm}) \times 10$$

- 6) Set the lead edge void.

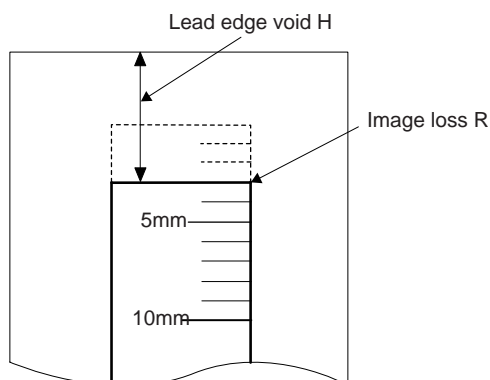
Measure H in the figure below.

$$\text{Lead edge void} = H(\text{mm}) \times 10$$

- 7) Enter the set value and press the start key.

The correction value is stored and a copy is made.

(Example)

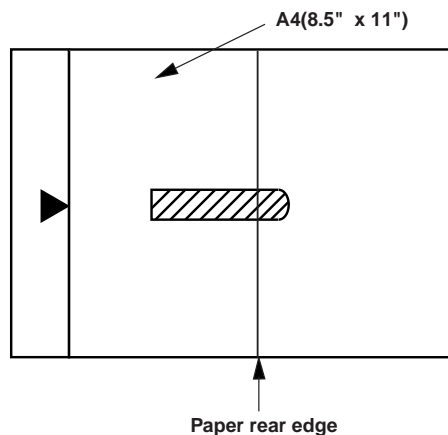


#### <Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Laser radiation timing	1 ~ 4mm	SIM 45-1	1 step: 0.1mm shift	1 ~ 99
Lead edge void adjustment				

#### b. Rear edge void adjustment

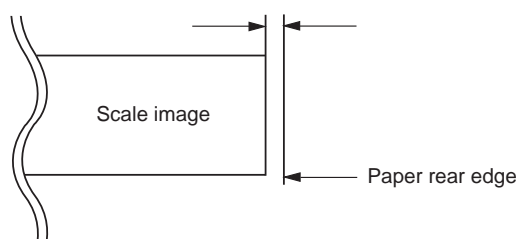
- 1) Set a scale as shown in the figure below.



- 2) Set the document size to A4, and make two copies at 100%.  
3) Check the second copy. If necessary, perform the following adjustment procedure.

\* The first copy does not show the void. Be sure to check the second copy.

Void amount (Standard value: 0 ~ 4mm)



- 4) Execute SIM 50-1 and set the density mode to AE + TEXT + PHOTO (Rear edge void).

The currently set adjustment value is displayed.

- 5) Enter the set value and press the start key.

The correction value is stored and a copy is made.

#### <Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Rear edge void	4mm or less	SIM 50-1	1 step: 0.1mm shift	1-99

#### c. Paper off center adjustment

- 1) Execute SIM 50-1 and set the density mode of Manual (TEXT) (Left edge void) to 0.

- 2) Set a test chart (UKOG-0089SCZZ) on the document table.

- 3) Select a paper feed port and make a copy.

Compare the copy and the test chart. If necessary, perform the following adjustment procedure.

- 4) Execute SIM 50-10.

After completion of warmup, shading is performed and the currently set off center adjustment value of each paper feed port is displayed.

- 5) Enter the set value and press the start key.

The correction value is stored and a copy is made.

#### <Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Paper off center	Single: Center $\pm 2.0\text{mm}$	SIM 50-10	Add 1: 0.1mm shift to R side. Reduce 1: 0.1mm shift to L side.	1 ~ 99
	Duplex: Center $\pm 2.5\text{mm}$			

#### d. Left edge void area adjustment

Note: Before performing this adjustment, be sure to check that the paper off center adjustment (SIM 50-10) is completed.

- 1) Set a test chart (UKOG-0089SCZZ) on the document table.

- 2) Select a paper feed port and make two copies.

Compare the second copy and the test chart. If necessary, perform the following adjustment procedure.

\* The first copy does not show the void. Be sure to check the second copy.

- 3) Execute SIM 50-1 and set the density mode to Manual (TEXT) (Left edge void).

The currently set adjustment value is displayed.

(When the off center adjustment previously described is performed, "0" is displayed.)

- 4) Enter the set value and press the start key.

The correction value is stored and a copy is made.

#### <Adjustment specification>

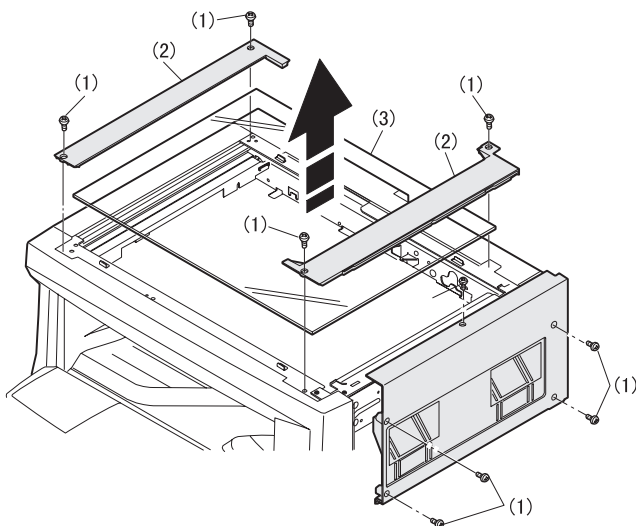
Mode	Specification	SIM	Set value	Set range
Left edge void	1 ~ 4mm	SIM 50-1	1 step: 0.1mm shift	1 ~ 99

\* When the left edge void is set with the paper off center adjusted, the both edge void is automatically adjusted.

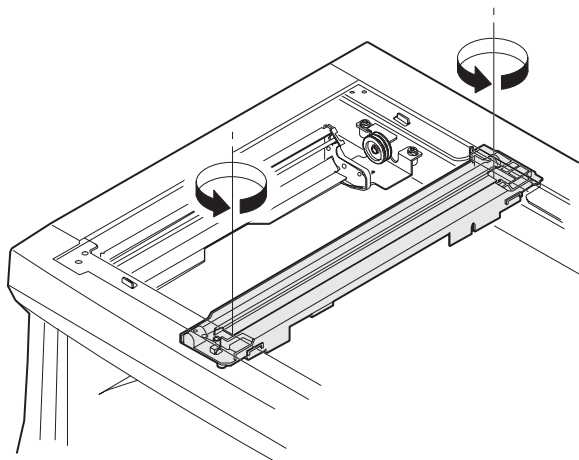
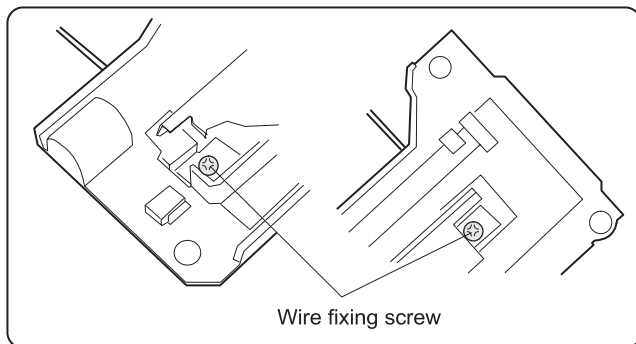


## (2) Main scanning direction (FR directional distortion balance adjustment)

- 1) Remove the OC glass and the right cabinet.



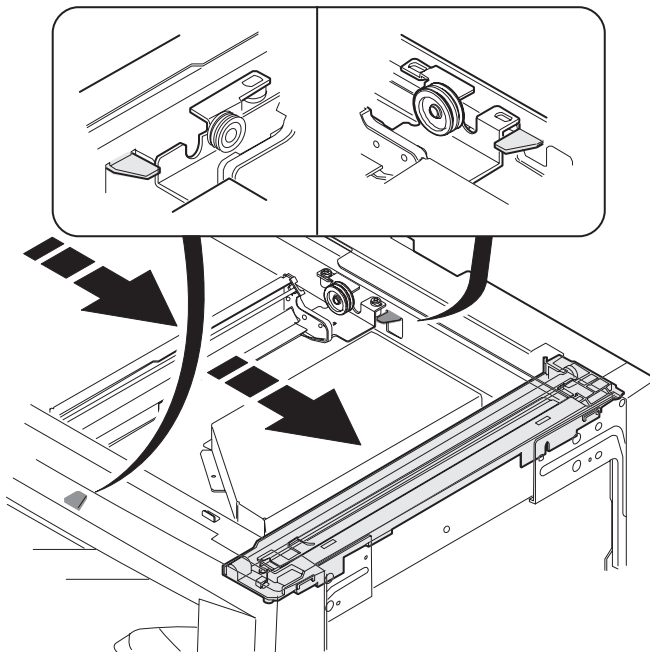
- 2) Loosen the copy lamp unit wire fixing screw.



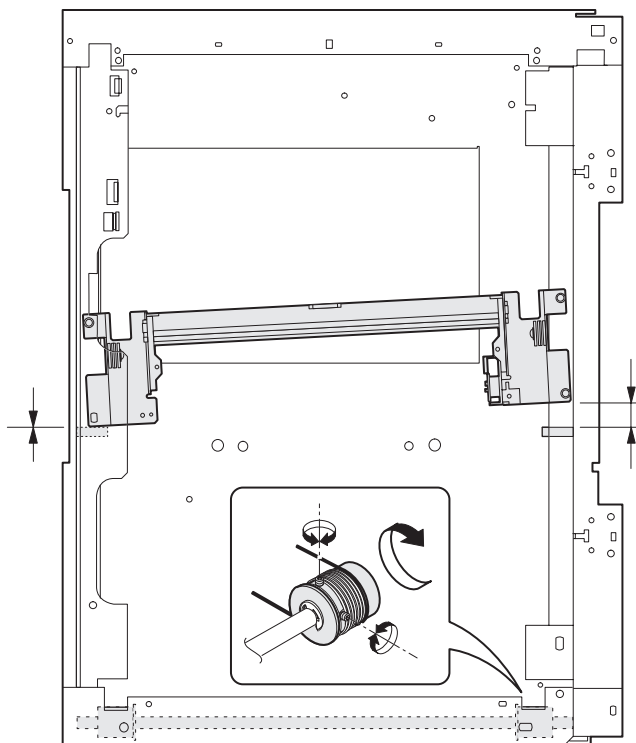
- 3) Manually turn the mirror base drive pulley and bring No. 2/3 mirror base unit into contact with the positioning plate.

At that time, if the front frame side and the rear frame side of No. 2/3 mirror base unit are brought into contact with the positioning plate at the same time, the mirror base unit parallelism is proper.

If one of them is in contact with the positioning plate, perform the adjustment of 4).

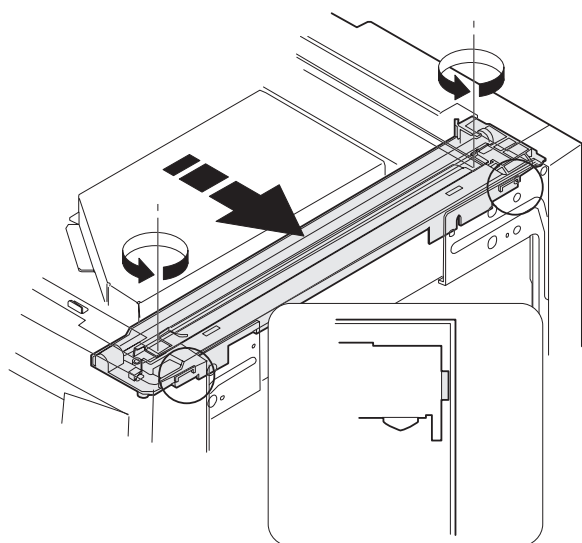
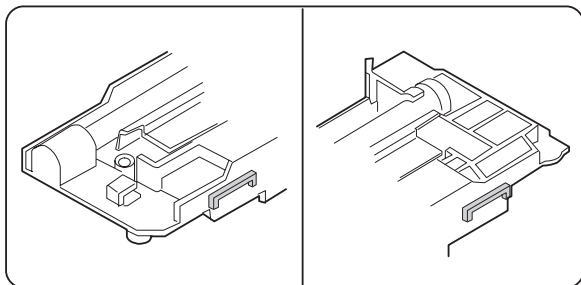


- 4) Loosen the set screw of the scanner drive pulley which is not in contact with No. 2/3 mirror base unit positioning plate.
- 5) Without moving the scanner drive pulley shaft, manually turn the scanner drive pulley until the positioning plate is brought into contact with No. 2/3 mirror base unit, then fix the scanner drive pulley.





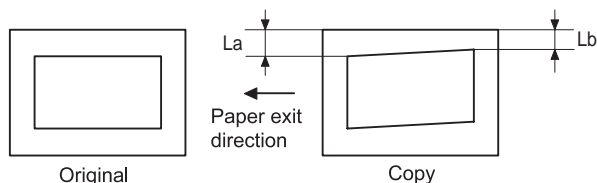
- 6) Put No. 2/3 mirror base unit on the positioning plate again, push the projections on the front frame side and the rear frame side of the copy lamp unit to the corner frame, and tighten the wire fixing screw.



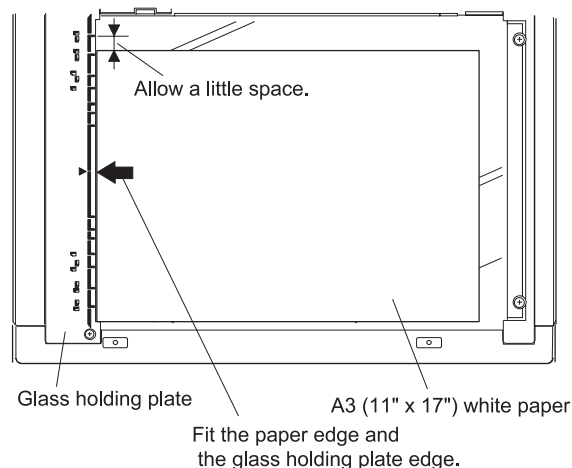
### (3) Main scanning direction (FR direction) distortion adjustment

This adjustment must be performed in the following cases:

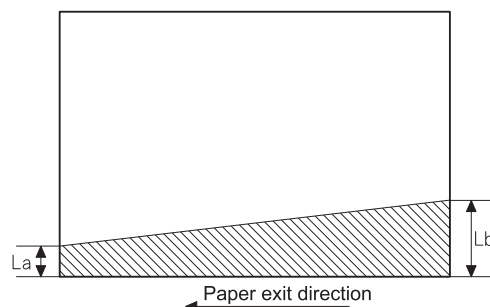
- When the mirror base drive wire is replaced.
- When the lamp unit, or No. 2/3 mirror holder is replaced.
- When a copy as shown is made.



- 1) Set A3 (11" x 17") white paper on the original table as shown below.



- 2) Open the original cover and make a normal (100%) copy.  
3) Measure the width of the black background at the lead edge and at the rear edge.

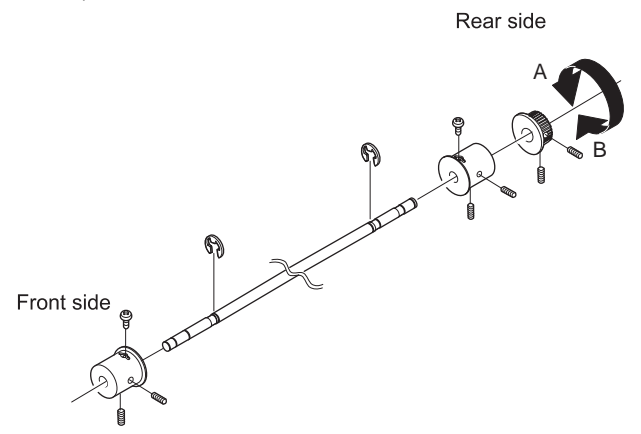


La: Lead edge black background width  
Lb: Rear edge black background width

If the width (La) of the black background at the lead edge is equal that (Lb) at the rear edge, there is no need to execute the following procedures of 4) ~ 7).

- 4) Loosen the mirror base drive pulley fixing screw on the front frame side or on the rear frame side.

- When  $La < Lb$   
Turn the mirror base drive pulley on the rear frame side in the arrow direction B. (Do not move the mirror base drive pulley shaft.)
- When  $La > Lb$   
Turn the mirror base drive pulley on the front frame side in the arrow direction A. (Do not move the mirror base drive pulley shaft.)



- 5) Tighten the mirror base drive pulley fixing screw.

#### <Adjustment specification>

$La = Lb$

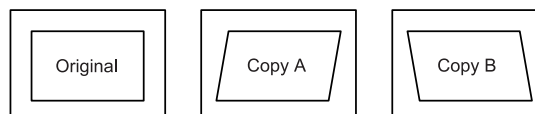
### (4) Sub scanning direction (scanning direction) distortion adjustment

When there is no skew copy in the mirror base scanning direction and there is no horizontal error (right angle to the scanning direction), the adjustment can be made by adjusting the No. 2/3 mirror base unit rail height.

Before performing this adjustment, be sure to perform the horizontal image distortion adjustment in the laser scanner section.

This adjustment must be performed in the following cases:

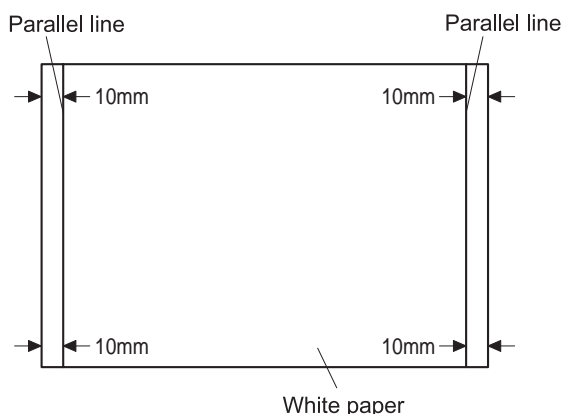
- When the mirror base wire is replaced.
- When the copy lamp unit or No. 2/3 mirror unit is replaced.
- When the mirror unit rail is replaced or moved.
- When a following copy is made.



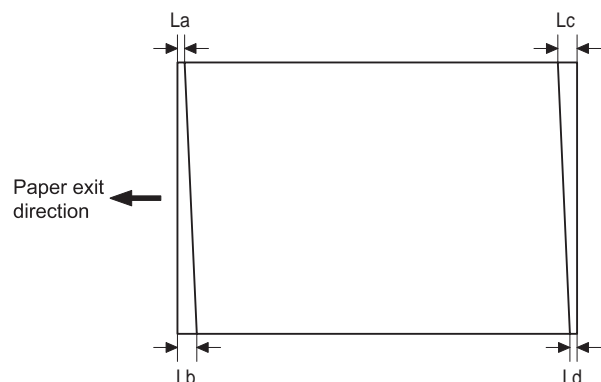


## 1) Making of a test sheet

Make test sheet by drawing parallel lines at 10mm from the both ends of A3 (11" x 17") white paper as shown below. (These lines must be correctly parallel to each other.)

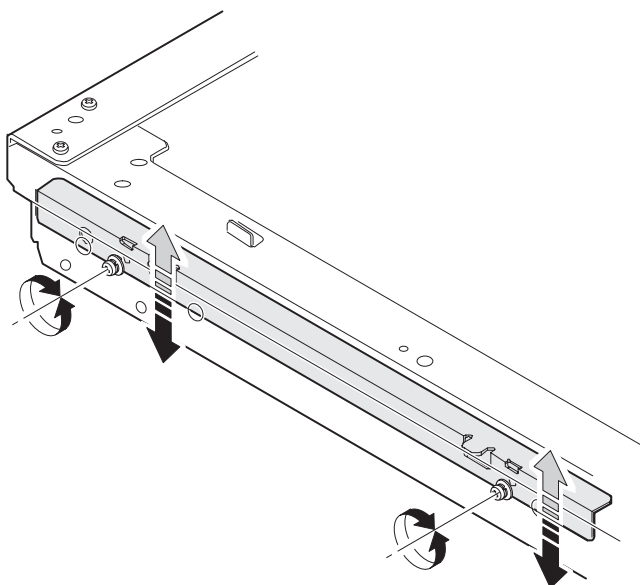


- 2) Make a normal (100%) copy of the test sheet on A3 (11" x 17") paper. (Fit the paper edge with the glass holding plate edge.)
- 3) Measure the distances ( $L_a$ ,  $L_b$ ,  $L_c$ ,  $L_d$ ) at the four corners as shown below.



When  $L_a = L_b$  and  $L_c = L_d$ , no need to perform the procedures 4) and 5).

- 4) Move the mirror base B rail position up and down (in the arrow direction) to adjust.



- When  $L_a > L_b$   
Shift the mirror base B rail upward by the half of the difference of  $L_a - L_b$ .
- When  $L_a < L_b$   
Shift the mirror base B rail downward by the half of the difference of  $L_b - L_a$ .  
Example: When  $L_a = 12\text{mm}$  and  $L_b = 9\text{mm}$ , shift the mirror base B rail upward by 1.5mm.
- When  $L_c > L_d$   
Shift the mirror base B rail downward by the half of the difference of  $L_c - L_d$ .
- When  $L_c < L_d$   
Shift the mirror base B rail downward by the half of the difference of  $L_d - L_c$ .
- \* When moving the mirror base rail, hold the mirror base rail with your hand.

## &lt;Adjustment specification&gt;

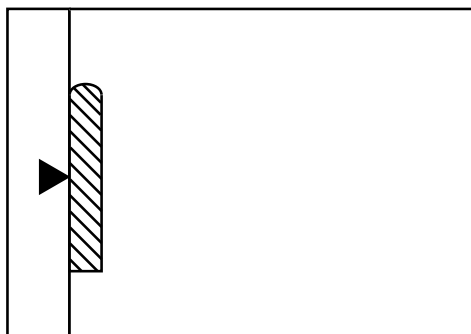
$L_a = L_b$ ,  $L_c = L_d$

- 5) After completion of adjustment, manually turn the mirror base drive pulley, scan the mirror base A and mirror base B fully, and check that the mirror bases are not in contact with each other.
- \* If the mirror base rail is moved extremely, the mirror base may be in contact with the frame or the original glass. Be careful to avoid this.

## (5) Main scanning direction (FR direction) magnification ratio adjustment (SIM 48-1)

Note: Before performing this adjustment, be sure to check that the CCD unit is properly installed.

- 1) Put a scale on the original table as shown below.



- 2) Execute SIM 48-1.
- 3) After warmup, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
- 4) Select the mode and press the start key again.
- 5) Auto correction mode (AE lamp ON)  
The mirror unit moves to the shading position, and the reference width of the reference white plate is scanned, and the correction value is automatically calculated from that scanned value.  
The correction value is displayed and a copy is made.
- 6) Compare the scale image and the actual scale.  
If a fine adjustment is required, switch to the manual correction mode with the magnification ratio display key and perform fine adjustment.
- 7) Manual correction mode (TEXT lamp ON)  
Enter the set value and press the start key.  
The set value is stored and a copy is made.



## &lt;Adjustment specification&gt;

Mode	Specification	SIM	Set value	Set range
Main scanning direction magnification ratio	At normal: $\pm 1.0\%$	SIM 48-1	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

- Error in the auto correction mode

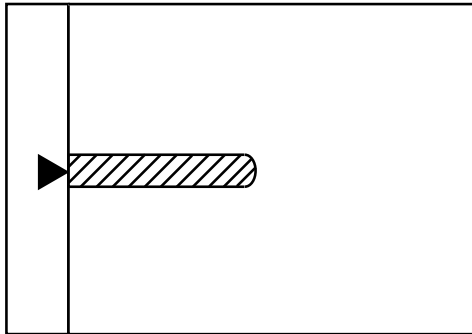
Display	Content	Major cause
Copy quantity display "-- --"	The correction value calculated is over 5%.	<ul style="list-style-type: none"> <li>• Improper position of reference width line of the reference white plate</li> <li>• Improper installation of CCD unit</li> </ul>
Paper jam lamp ON	Reference line scanning error	<ul style="list-style-type: none"> <li>• Defective CCD</li> <li>• No reference white plate</li> </ul>

## (6) Sub scanning direction (scanning direction) magnification ratio adjustment (SIM 48-2, SIM 48-5)

### a. OC mode in copying

Note: • Before performing this adjustment, be sure to check that the CCD unit is properly installed.

- 1) Put a scale on the original table as shown below, and make a normal (100%) copy.



- 2) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
- 3) Execute SIM 48-2.
- 4) After warmup, shading is performed and the current set value of the sub scanning direction magnification ratio is displayed on the display section in 2 digits.
- 5) Enter the set value and press the start key.  
The set value is stored and a copy is made.

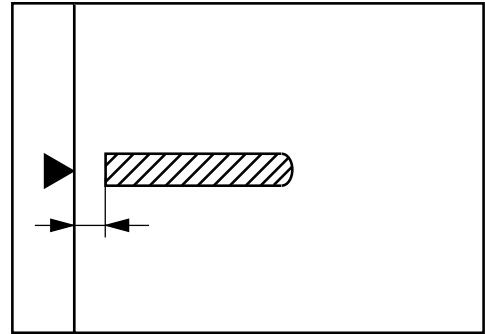
## &lt;Adjustment specification&gt;

Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (OC mode)	Normal $\pm 1.0\%$	SIM 48-2	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

### b. SPF mode in copying

Note: • Before performing this adjustment, be sure to check that the CCD unit is properly installed.  
• Before performing this adjustment, the OC mode adjustment in copying must be completed.

- 1) Put a scale on the original table as shown below, and make a normal (100%) copy to make a test chart.



Note: Since the printed copy is used as a test chart, put the scale in parallel with the edge lines.

- 2) Set the test chart on the SPF and make a normal (100%) copy.
- 3) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
- 4) Execute SIM 48-5.
- 5) After warmup, shading is performed and the current set value of the sub scanning direction magnification ratio is displayed on the display section in 2 digits.
- 6) Enter the set value and press the start key.  
The set value is stored and a copy is made.

## &lt;Adjustment specification&gt;

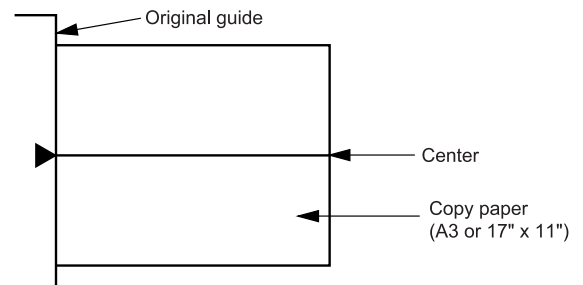
Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (SPF mode)	Normal $\pm 1.0\%$	SIM 48-5	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

## (7) Off center adjustment (SIM 50-13, SIM 50-16)

### a. OC mode

Note: • Before performing this adjustment, be sure to check that the paper off center is properly adjusted. (SIM 50-10)

- 1) Make a test chart as shown below and set it so that its center line is fit with the original guide center mark.  
\* To make a test chart, draw a line on A3 or 11" x 17" paper at the center in the paper transport direction.



- 2) Make a normal copy from the manual paper feed tray, and compare the copy and the test chart.  
If necessary, perform the following adjustment procedures.
- 3) Execute SIM 50-13.
- 4) After warmup, shading is performed and the current set value of the off center adjustment is displayed on the display section in 2 digits.
- 5) Enter the set value and press the start key.  
The set value is stored and a copy is made.



## &lt;Adjustment specification&gt;

Mode	Specification	SIM	Set value	Set range
Original off center mode (OC mode)	Single: Center $\pm 2.0\text{mm}$	SIM 50-18	Add 1: 0.1mm shift to R side	1 ~ 99
	Duplex: Center $\pm 2.5\text{mm}$		Reduce 1: 0.1mm shift to L side	

**b. SPF mode**

Note: • Before performing this adjustment, be sure to check that the paper off center is properly adjusted.

- 1) Make a test chart for the center position adjustment and set it on the SPF.

## &lt;Adjustment specification&gt;

Draw a line on a paper in the scanning direction.

- 2) Make a normal copy from the manual paper feed tray, and compare the copy and the original test chart.  
If necessary, perform the following adjustment procedures.
- 3) Execute SIM 50-16.
- 4) After warmup, shading is performed and the current set value of the off center adjustment at each paper feed port is displayed on the display section in 2 digits.
- 5) Enter the set value and press the start key.  
The set value is stored and a copy is made.

## &lt;Adjustment specification&gt;

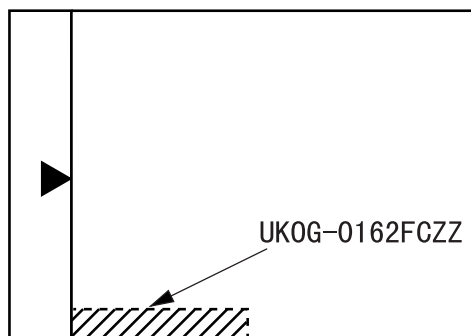
Mode	Specification	SIM	Set value	Set range
Original off center mode (SPF mode)	Single: Center $\pm 3.0\text{mm}$	SIM 50-16	Add 1: 0.1mm shift to R side	1 ~ 99
	Duplex: Center $\pm 3.5\text{mm}$		Reduce 1: 0.1mm shift to L side	

**(8) Original sensor adjustment (SIM 43-3)**

- 1) Execute SIM 41-2.
- 2) Set A3 (11" x 17") paper on the OC table.
- 3) Press the start key again.
- 4) The sensor level of the original sensor is automatically checked and the value with an original - 40 is made as the threshold value for scanning. (Automatic setting)
- 5) Execute SIM 43-3.
- 6) The light reception level of the original sensor is displayed.  
The first digit of the copy quantity display shows "A": Light reception level display  
The first digit of the copy quantity display shows "b": Original judgement level display  
(The mode selection is made with the magnification ratio display key.)
- 7) By changing the paper set on the original table, the original size LED sensed by the sensor is lighted.

**C. Image density adjustment****(1) Copy mode (SIM 46-1)**

- 1) Set a test chart (UKOG-0162FCZZ) on the OC table as shown below.



- 2) Put several sheets of A3 or 11" x 17" white paper on the test chart.
- 3) Execute SIM 46-1.
- 4) After warmup, shading is performed and the current set value of the density level is displayed on the display section in 2 digits.  
For mode selection, use the density select key.
- 5) Change the set value with the 10-key to adjust the copy image density.
- 6) Make a copy and check that the specification below is satisfied.

## &lt;Adjustment specification&gt;

Density mode	Display lamp	Exposure level	Sharp Gray Chart output	Set value	Set range
Auto	Auto	—	"3" is slightly copied.	The greater the set value is, the greater the density is.	1 ~ 99
Manual	Manual	3	"3" is slightly copied.	The smaller the set value is, the smaller the density is.	
Photo	Photo	3	"3" is slightly copied.		
Toner save	Manual/Photo	3	"3" is slightly copied.		



## [8] SIMULATION

### 1. Entering the simulation mode

Perform the following procedure to enter the simulation mode.

Clear key → Interruption key → Shift key → Interruption key → Start key → Sub code → Start key

### 2. Cancelling the simulation mode

When the all clear key is pressed, the simulation mode is cancelled.

When the interruption key is pressed, the process is interrupted and the screen returns to the sub code entering display.

### 3. List of simulations

Main code	Sub code	Contents
1	1	Mirror unit operation check
	2	Optical system sensor operation check
2	1	SPF aging
	2	SPF sensor operation check
	3	SPF motor forward rotation operation check
	4	SPF motor reverse rotation operation check
	8	SPF paper feed solenoid operation check
	9	SPF reverse solenoid operation check
	10	SPF paper exit gate solenoid operation check
	11	SPF PS release solenoid operation check
3	2	Shifter job separator sensor operation check
	3	Shifter operation check
	4	Job separator operation check
	10	Job separator home position check
5	1	Operation panel display check
	2	Heater lamp lighting check, cooling fan motor operation check
	3	Copy lamp lighting check
6	1	Paper feed solenoid operation check
	10	Main cassette semi-circular roller drive
7	1	Aging with JAM with warmup time display
	2	Aging without JAM with warmup time display
	4	Warmup saving
	6	Intermittent aging (with paper)
	7	Intermittent aging (without paper)
	8	Warmup time display
8	1	Developing bias voltage output check
	2	Main charger voltage output check (Grid bias high mode)
	3	Main charger voltage output check (Grid bias low mode)
	6	Transfer charger voltage check
9	1	Duplex motor forward rotation operation check
	2	Duplex motor reverse rotation operation check
	4	Duplex motor rotation speed adjustment
	5	Duplex motor switchback time adjustment
10		Toner motor operation check
14		Trouble (except for U2) cancel
16		U2 trouble cancel
17		PF trouble cancel
20	1	Maintenance counter clear
21	1	Maintenance cycle setting
	2	Mini maintenance counter display
22	1	Maintenance counter display
	2	Maintenance preset value display

Main code	Sub code	Contents
22	3	JAM memory display
	4	Total JAM counter display
	5	Total counter display
	6	Developing counter display
	7	Developing preset counter value display
	8	SPF counter display
	9	Paper feed counter display
	12	Drum counter display
	14	Flash ROM version display
	15	Trouble memory display
	16	Duplex print counter display
	17	Copy counter display
	18	Printer counter display
	19	Electronic sort counter display
	20	FAX print counter display
	21	Scanner counter display
24	1	JAM memory, JAM counter clear
	2	Trouble memory clear
	4	SPF counter clear
	5	Duplex counter clear
	6	Paper feed counter clear
	7	Drum counter clear
	8	Copy counter clear
	9	Printer counter clear
	10	Electronic sort counter clear
	11	FAX print counter clear
	13	Scanner counter clear
25	1	Main motor operation check
	10	Polygon motor operation check
26	1	Operation switch display
	3	Auditor setting
	5	Counter mode setting
	6	Destination setting
	22	Language setting
	30	CE mark conformity control setting
30	1	Machine sensor operation check
41	2	OC document sensor adjustment
	3	Document sensor light reception level display
42	1	Developer counter clear
43	1	Fusing temperature setting
46	1	Copy density level adjustment
	2	FAX density level adjustment
48	1	Main scanning (front/rear) direction magnification ratio adjustment(Copy/FAX/OC-SPF common)
	2	OC mode sub scanning direction magnification ratio adjustment in copying
	5	SPF mode sub scanning direction magnification ratio adjustment in copying
	6	OC mode sub scanning direction magnification ratio adjustment in FAX
	7	SPF mode sub scanning direction magnification ratio adjustment in FAX
50	1	Copy image lead edge position adjustment
	10	Paper off center adjustment
	13	OC mode document off center adjustment
	16	SPF mode document off center adjustment
51	2	Resist amount adjustment
63	1	Shading data check
64	1	Self printing mode
69	1	Program download mode



## 4. Contents of simulations

Main code	Sub code	Contents	Details of operation	Initial value	Set range				
1	1	Mirror unit operation check	Used to execute scanning at the speed corresponding to the set magnification ratio. <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Changing the magnification ratio: Fixed magnification ratio key</td><td>Set magnification ratio: Fixed magnification ratio LED</td></tr></table>	Key operation	Display	Changing the magnification ratio: Fixed magnification ratio key	Set magnification ratio: Fixed magnification ratio LED	100%	50 ~ 200%
	Key operation	Display							
Changing the magnification ratio: Fixed magnification ratio key	Set magnification ratio: Fixed magnification ratio LED								
2	Optical system sensor operation check	Used to check MHPS (Mirror home position sensor) ON/OFF state with the LED on the operation panel. <table><tr><th>Display</th></tr><tr><td>&lt;Lighting when the sensor is ON&gt; MHPS: Paper empty LED</td></tr></table>	Display	<Lighting when the sensor is ON> MHPS: Paper empty LED					
Display									
<Lighting when the sensor is ON> MHPS: Paper empty LED									
2	1	SPF aging	Used to perform SPF document transport. The paper size is not detected. (Excluding postcards, extra large sheet of 1m or greater.) With SPF installed: Single transport operation With RSPF installed: Duplex transport operation						
	2	SPF sensor operation check	Used to check sensors in SPF with the LED on the operation panel. <table><tr><th>Display</th></tr><tr><td>&lt;Lighting at sensor ON&gt; PW1: JAM LED PW2: Paper empty LED PW3: Machine position JAM LED PW4: SPF JAM LED PL1: Manual paper feed tray select LED PL2: Second cassette position JAM LED P-IN: SPF select LED P-OUT: Main cassette select LED</td></tr></table>	Display	<Lighting at sensor ON> PW1: JAM LED PW2: Paper empty LED PW3: Machine position JAM LED PW4: SPF JAM LED PL1: Manual paper feed tray select LED PL2: Second cassette position JAM LED P-IN: SPF select LED P-OUT: Main cassette select LED				
	Display								
	<Lighting at sensor ON> PW1: JAM LED PW2: Paper empty LED PW3: Machine position JAM LED PW4: SPF JAM LED PL1: Manual paper feed tray select LED PL2: Second cassette position JAM LED P-IN: SPF select LED P-OUT: Main cassette select LED								
	3	SPF motor forward rotation operation check	Used to rotate the SPF motor forward at the speed corresponding to the currently set magnification ratio for 10 sec. <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Magnification ratio change: Fixed magnification ratio key</td><td>Set magnification ratio: Fixed magnification ratio LED</td></tr></table>	Key operation	Display	Magnification ratio change: Fixed magnification ratio key	Set magnification ratio: Fixed magnification ratio LED	100%	50 ~ 200%
	Key operation	Display							
	Magnification ratio change: Fixed magnification ratio key	Set magnification ratio: Fixed magnification ratio LED							
	4	SPF motor reverse rotation operation check	Used to rotate the SPF motor reversely for 10 sec.						
	8	SPF paper feed solenoid operation check	Used to drive the SPF paper feed solenoid (PSOL) at the cycle of 500msec ON and 500msec OFF 20 times.						
	9	SPF reverse solenoid operation check	Used to drive the SPF reverse solenoid (RSOL) at the cycle of 500msec ON and 500msec OFF 20 times.						
10	SPF paper exit gate solenoid operation check	Used to drive the SPF paper exit gate solenoid (GSOL) at the cycle of 500msec ON and 500msec OFF 20 times.							
11	SPF PS release solenoid operation check	Used to drive the SPF PS release solenoid at the cycle of 500msec ON and 500msec OFF 20 times.							
3	2	Shifter job separator sensor operation check	Used to check the sensors state in the shifter job separator with the LED on the operation panel. <table><tr><th>Display</th></tr><tr><td>&lt;Lighting at sensor ON&gt; Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: Second cassette position JAM LED</td></tr></table>	Display	<Lighting at sensor ON> Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: Second cassette position JAM LED				
	Display								
<Lighting at sensor ON> Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: Second cassette position JAM LED									
3	Shifter operation check	Used to drive the shifter motor at the speed of printing of A4 (8-1/2 × 11"). Pressing the start key or the clear all key moves the shifter to the home position. <table><tr><th>Key operation</th></tr><tr><td>The shifter is moved to the home position: Start key or clear all key</td></tr></table>	Key operation	The shifter is moved to the home position: Start key or clear all key					
Key operation									
The shifter is moved to the home position: Start key or clear all key									



Main code	Sub code	Contents	Details of operation	Initial value	Set range				
3	4	Job separator operation check	Used to drive the job separator one way. Pressing the clear key stops the job separator at the home position. <table border="1"><tr><td>Key operation</td></tr><tr><td>Stops at the home position: Clear all key</td></tr></table>	Key operation	Stops at the home position: Clear all key				
	Key operation								
Stops at the home position: Clear all key									
	10	Job separator home position check	Used to drive the job separator to the home position. Then it is shifted by the specified number of steps for check, and the position is made as the origin. It is shifted from the origin by the specified number of steps.						
5	1	Operation panel display check	Used to light all LED's on the operation panel for 5 sec.						
	2	Heater lamp lighting check, cooling fan motor operation check	Used to turn ON the heater lamp for 500msec and OFF for 500msec 5 times. At the same time, the cooling fan is rotated at a high speed. After checking the heater lamp operation, the cooling fan motor rotate at a low speed.						
	3	Copy lamp lighting check	Used to light the copy lamp for 5 sec. At that time, the copy lamp brightness can be changed with the density adjustment key. When this simulation is canceled, the copy lamp brightness if automatically adjusted. <table border="1"><tr><td>Key operation</td></tr><tr><td>Copy lamp brightness: Density adjustment key</td></tr></table>	Key operation	Copy lamp brightness: Density adjustment key				
Key operation									
Copy lamp brightness: Density adjustment key									
6	1	Paper feed solenoid operation check	When the start key is pressed, the selected paper feed solenoid is driven at the cycle of 500msec ON and 500msec OFF 20 times. <table border="1"><tr><th>Key operation</th><th>Display</th></tr><tr><td>Solenoid selection: Tray select button</td><td>&lt;Lighting at solenoid selection&gt; Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED No. 3 cassette paper feed solenoid: No. 3 cassette select LED No. 4 cassette paper feed solenoid: No. 4 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED No. 3 cassette transport solenoid: No. 3 cassette position JAM LED No. 4 cassette transport solenoid: No. 4 cassette position JAM LED Paper out 1 solenoid: Paper empty LED Paper out 2 solenoid: SPF JAM LED Paper out 3 solenoid: SPF select LED</td></tr></table>	Key operation	Display	Solenoid selection: Tray select button	<Lighting at solenoid selection> Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED No. 3 cassette paper feed solenoid: No. 3 cassette select LED No. 4 cassette paper feed solenoid: No. 4 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED No. 3 cassette transport solenoid: No. 3 cassette position JAM LED No. 4 cassette transport solenoid: No. 4 cassette position JAM LED Paper out 1 solenoid: Paper empty LED Paper out 2 solenoid: SPF JAM LED Paper out 3 solenoid: SPF select LED		
	Key operation	Display							
Solenoid selection: Tray select button	<Lighting at solenoid selection> Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED No. 3 cassette paper feed solenoid: No. 3 cassette select LED No. 4 cassette paper feed solenoid: No. 4 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED No. 3 cassette transport solenoid: No. 3 cassette position JAM LED No. 4 cassette transport solenoid: No. 4 cassette position JAM LED Paper out 1 solenoid: Paper empty LED Paper out 2 solenoid: SPF JAM LED Paper out 3 solenoid: SPF select LED								
	10	Main cassette semi-circular roller drive	Used to rotate the semi-circular roller of the main cassette one turn to face it downward.						
7	1	Aging with JAM with warmup time display	Used to start warmup and count and display the warmup time every second. After completion of warmup, count up is terminated and the ready lamp is lighted. When the clear key is pressed and the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. At that time, the paper size does not matter. <table border="1"><tr><td>Key operation</td></tr><tr><td>Copy quantity setting: Numeric keys</td></tr></table>	Key operation	Copy quantity setting: Numeric keys		1 ~ 9		
Key operation									
Copy quantity setting: Numeric keys									



Main code	Sub code	Contents	Details of operation	Initial value	Set range
7	2	Aging without JAM with warmup time display	Used to start warmup and count and display the warmup time every second. After completion of warmup, count up is terminated and the ready lamp is lighted. When the clear key is pressed and the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. At that time, the paper size does not matter.  <div> <div>Key operation</div> <div>Copy quantity setting: Numeric keys</div> </div>		1 ~ 99
	4	Warmup saving	Used to bring the machine to the ready state without warmup.		
	6	Intermittent aging (with paper)	After completion of warmup, counting is stopped and the ready lamp is lighted. When the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. After 3 sec standby, copying is made again to make the set quantity of copies. After that this operation is repeated. The paper size does not matter.  <div> <div>Key operation</div> <div>Copy quantity setting: Numeric keys</div> </div>		1 ~ 99
	7	Intermittent aging (without paper)	After completion of warmup, counting is stopped and the ready lamp is lighted. When the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. After 3 sec standby, copying is made again to make the set quantity of copies. After that this operation is repeated. The paper size does not matter.  <div> <div>Key operation</div> <div>Copy quantity setting: Numeric keys</div> </div>		1 ~ 99
	8	Warmup time display	Used to count and display the warmup time from 0 at every second.		
8	1	Developing bias voltage output check	Used to output the developing bias for 30 sec. For the adjustment procedure of the developing bias, refer to the previous descriptions.		
	2	Main charger voltage output check (Grid bias high mode)	Used to output the main charger grid bias voltage at the high mode for 30 sec. For the adjustment procedure of the main charger grid bias voltage, refer to the previous descriptions.		
	3	Main charger voltage output check (Grid bias low mode)	Used to output the main charger grid bias voltage at the low mode for 30 sec. For the adjustment procedure of the main charger grid bias voltage, refer to the previous descriptions.		
	6	Transfer charger voltage check	Used to output the transfer charger voltage for 30 sec. For the adjustment procedure of the transfer charger voltage, refer to the previous descriptions.		
9	1	Duplex motor forward rotation operation check	Used to rotate the duplex motor forward for 30 sec.		
	2	Duplex motor reverse rotation operation check	Used to rotate the duplex motor reversely for 30 sec.		
	4	Duplex motor rotation speed adjustment	After completion of warmup, the ready lamp is lighted and the currently set duplex motor rotation speed set value is displayed. When the set value is entered and the start key is pressed, the set value is stored.  <div> <div>Key operation</div> <div>Duplex motor rotation speed set value: Numeric keys</div> </div>		
	5	Duplex motor switchback time adjustment	After completion of warmup, the ready lamp is lighted and the currently set duplex motor switchback time set value is displayed. When the set value is entered and the start key is pressed, the set value is stored.  <div> <div>Key operation</div> <div>Duplex motor switchback time set value: Numeric keys</div> </div>		
10		Toner motor operation check	Used to operate the toner motor for 30 sec. Note: If this simulation is executed with the toner hopper installed, toner is automatically supplied to the developer. Be careful of overtoner.		
14		Trouble (except for U2) cancel	Used to cancel troubles except for U2.		
16		U2 trouble cancel	Used to cancel U2 trouble.		
17		PF trouble cancel	Used to cancel PF trouble.		



Main code	Sub code	Contents	Details of operation	Initial value	Set range
20	1	Maintenance counter clear	Used to clear the maintenance counter. *2		
21	1	Maintenance cycle setting	Used to display the currently set maintenance cycle at the numbers shown at right. When the set value is entered and the start key is pressed, the set value is stored. <div><div>Key operation/Display</div><div>0: 2500 sheets 1: 5000 sheets 2: 15000 sheets 3: 30000 sheets 4: 150000 sheets 5: FREE (999999 sheets)</div></div>		
	2	Mini maintenance counter display	Used to display the currently set mini maintenance cycle at the numbers shown at right. When the set value is entered and the start key is pressed, the set value is stored. <div><div>Key operation/Display</div><div>0: 2500 sheets 1: 5000 sheets 2: 10000 sheets 3: FREE (999999 sheets)</div></div>		
22	1	Maintenance counter display	Used to display the current maintenance counter value. *1		
	2	Maintenance preset value display	Used to display the current maintenance preset value (set with SIM 21-1). *1		
	3	JAM memory display	Used to display a JAM generated during copying on the JAM position display on the operation panel. Max. 30 recent jams are stored. <div><div><div>Key operation</div><div>JAM history select: Magnification ratio key</div></div><div><div>Display</div><div>The history number (1 ~ 30) is displayed on the display. The JAM position LED corresponding to the history number is lighted.</div></div></div>		
	4	Total JAM counter display	Used to display the current total JAM counter value. *1		
	5	Total counter display	Used to display the current total counter value. *1		
	6	Developing counter display	Used to display the current developing unit counter value. *1		
	7	Developing preset counter value display	Used to display the current mini maintenance preset value (set with SIM 21-2). *1		
	8	SPF counter display	Used to display the current SPF counter value. *1		
	9	Paper feed counter display	Used to display the current paper feed counter value for each paper feed port. *1 <div><div>Key operation</div><div>Paper feed port selection: Tray select key</div></div>		
	12	Drum counter display	Used to display the current drum counter value. *1		
	14	Flash ROM version display	Used to display the version number of the flash ROM of each PWB.		
	15	Trouble memory display	Used to display the actually occurred trouble codes on the display on the operation panel. When the start key is pressed during the main code display, the sub code is displayed. Max. 20 recent trouble codes are stored. <div><div><div>Key operation</div><div>Sub code display: Start key Trouble code history select: Magnification ratio display key</div></div><div><div>Display</div><div>Hysteresis 1 → 10: The upper digit of display "A" ~ "J" lights up. Hysteresis 11 → 20: The upper digit of display "A: ~ "J" blinks.<ul style="list-style-type: none"><li>Display without trouble code Main code: "----" Sub code: "00"</li></ul></div></div></div>		

\*1: Each counter display method

To display 12345: 123 (0.75 sec) → Blank (0.35sec) → 456 (0.75 sec) → Blank (1.0 sec) → repetition

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35sec) → 000 (0.75 sec) → Blank (1.05 sec) → Repetition



Main code	Sub code	Contents	Details of operation	Initial value	Set range						
22	16	Duplex print counter display	Used to display the current duplex print counter value. *1								
	17	Copy counter display	Used to display the current copy counter value. *1								
	18	Printer counter display	Used to display the current printer counter value. *1								
	19	Electronic sort counter display	Used to display the current electronic sort counter value. *1								
	20	FAX print counter display	Used to display the current FAX print counter value. *1								
	21	Scanner counter display	Used to display the current scanner counter value.								
24	1	JAM memory, JAM counter clear	Used to clear the JAM memory and the JAM counter. *2								
	2	Trouble memory clear	Used to clear the trouble memory. *2								
	4	SPF counter clear	Used to clear the SPF counter. *2								
	5	Duplex counter clear	Used to clear the duplex counter. *2								
	6	Paper feed counter clear	Used to clear the paper feed counter. *2								
	7	Drum counter clear	Used to clear the drum counter. *2								
	8	Copy counter clear	Used to clear the copy counter. *2								
	9	Printer counter clear	Used to clear the printer counter. *2								
	10	Electronic sort counter clear	Used to clear the electronic sort counter. *2								
	11	FAX print counter clear	Used to clear the FAX print counter. *2								
	13	Scanner counter clear	Used to clear the scanner counter.								
25	1	Main motor operation check	Used to drive the main motor for 30 sec. At that time, the cooling motor rotates at a low speed. When the developing unit is installed, the developing bias, the grid, and the main charger are driven. When the developing unit is not installed, only the main motor is driven.								
	10	Polygon motor operation check	Used to drive the polygon motor for 30 sec.								
26	1	Operation switch display	Used to display the installed option on the operation panel. (The LED corresponding to the installed option is lighted.) <table border="1"><thead><tr><th>Key operation</th><th>Display</th></tr></thead><tbody><tr><td>Display select:</td><td>&lt;Lighting with an option installed&gt;</td></tr><tr><td>Magnification ratio key</td><td><b>When "A" is displayed:</b> Shifter: Paper empty LED Job separator: JAM LED SPF: SPF select LED RSPF: SPF JAM LED Dehumidifying heater: Main body JAM LED Simplex mode: Multi manual paper feed select LED <b>When "B" is displayed:</b> Cassette (2nd step): No. 2 cassette select LED Cassette (3rd step): No. 3 cassette select LED Cassette (4th step): No. 4 cassette select LED Memory installed: Paper empty LED FAX: JAM LED Printer: Main body JAM LED ERDH: Main cassette select LED 16CPM: SPF JAM LED 20CPM: SPF select LED Document sensor: Auto paper select LED</td></tr></tbody></table>	Key operation	Display	Display select:	<Lighting with an option installed>	Magnification ratio key	<b>When "A" is displayed:</b> Shifter: Paper empty LED Job separator: JAM LED SPF: SPF select LED RSPF: SPF JAM LED Dehumidifying heater: Main body JAM LED Simplex mode: Multi manual paper feed select LED <b>When "B" is displayed:</b> Cassette (2nd step): No. 2 cassette select LED Cassette (3rd step): No. 3 cassette select LED Cassette (4th step): No. 4 cassette select LED Memory installed: Paper empty LED FAX: JAM LED Printer: Main body JAM LED ERDH: Main cassette select LED 16CPM: SPF JAM LED 20CPM: SPF select LED Document sensor: Auto paper select LED		
	Key operation	Display									
Display select:	<Lighting with an option installed>										
Magnification ratio key	<b>When "A" is displayed:</b> Shifter: Paper empty LED Job separator: JAM LED SPF: SPF select LED RSPF: SPF JAM LED Dehumidifying heater: Main body JAM LED Simplex mode: Multi manual paper feed select LED <b>When "B" is displayed:</b> Cassette (2nd step): No. 2 cassette select LED Cassette (3rd step): No. 3 cassette select LED Cassette (4th step): No. 4 cassette select LED Memory installed: Paper empty LED FAX: JAM LED Printer: Main body JAM LED ERDH: Main cassette select LED 16CPM: SPF JAM LED 20CPM: SPF select LED Document sensor: Auto paper select LED										
3	Auditor setting	Used to display the current auditor setting with the numbers at right. After entering the set value, press the start key, and the set value is stored. <table border="1"><thead><tr><th>Key operation/Display</th></tr></thead><tbody><tr><td>0: Built-in auditor</td></tr><tr><td>1: Coin vendor</td></tr><tr><td>2: Others</td></tr></tbody></table>	Key operation/Display	0: Built-in auditor	1: Coin vendor	2: Others					
Key operation/Display											
0: Built-in auditor											
1: Coin vendor											
2: Others											

\*1: Each counter display method

To display 12345: 123 (0.75 sec) → Blank (0.35sec) → 456 (0.75 sec) → Blank (1.0 sec) → repetition

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35sec) → 000 (0.75 sec) → Blank (1.05 sec) → Repetition



Main code	Sub code	Contents	Details of operation	Initial value	Set range																									
26	5	Counter mode setting	Used to set the print counter mode in A3 or 11" × 17". Used to display the currently set counter value with the numbers at right. After entering the set value, press the start key, and the set value is stored. <table border="1"><thead><tr><th colspan="2">Key operation/Display</th></tr></thead><tbody><tr><td>0: Total/Developer = 2 counts</td><td>Maintenance = 2 counts</td></tr><tr><td>1: Total/Developer = 1 count</td><td>Maintenance = 2 counts</td></tr><tr><td>2: Total/Developer = 2 counts</td><td>Maintenance = 1 count</td></tr><tr><td>3: Total/Developer = 1 count</td><td>Maintenance = 1 count</td></tr></tbody></table>	Key operation/Display		0: Total/Developer = 2 counts	Maintenance = 2 counts	1: Total/Developer = 1 count	Maintenance = 2 counts	2: Total/Developer = 2 counts	Maintenance = 1 count	3: Total/Developer = 1 count	Maintenance = 1 count																	
	Key operation/Display																													
	0: Total/Developer = 2 counts	Maintenance = 2 counts																												
	1: Total/Developer = 1 count	Maintenance = 2 counts																												
2: Total/Developer = 2 counts	Maintenance = 1 count																													
3: Total/Developer = 1 count	Maintenance = 1 count																													
6	Destination setting	Used to display the current destination setting with the numbers at right. After entering the set value, press the start key, and the set value is stored. <table border="1"><thead><tr><th colspan="2">Key operation/Display</th></tr></thead><tbody><tr><td colspan="2">0: Japan</td></tr><tr><td colspan="2">1: USA (Inch series)</td></tr><tr><td colspan="2">2: Canada (Inch series)</td></tr><tr><td colspan="2">3: Germany (AB series)</td></tr><tr><td colspan="2">4: UK (AB series)</td></tr><tr><td colspan="2">5: Australia (AB series)</td></tr><tr><td colspan="2">6: France (AB series)</td></tr><tr><td colspan="2">7: EX inch series</td></tr><tr><td colspan="2">8: EX AB series</td></tr><tr><td colspan="2">9: EX inch series (FC conformity)</td></tr><tr><td colspan="2">10: EX AB series (FC conformity)</td></tr><tr><td colspan="2">11: Taiwan, China (AB series)</td></tr></tbody></table>	Key operation/Display		0: Japan		1: USA (Inch series)		2: Canada (Inch series)		3: Germany (AB series)		4: UK (AB series)		5: Australia (AB series)		6: France (AB series)		7: EX inch series		8: EX AB series		9: EX inch series (FC conformity)		10: EX AB series (FC conformity)		11: Taiwan, China (AB series)			
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8: EX AB series																														
9: EX inch series (FC conformity)																														
10: EX AB series (FC conformity)																														
11: Taiwan, China (AB series)																														
22	Language setting	Used to display the current setting of the language information with the number at right. After entering the set value, press the start key, and the set value is stored. <table border="1"><thead><tr><th colspan="2">Key operation/Display</th></tr></thead><tbody><tr><td colspan="2">0: Japanese</td></tr><tr><td colspan="2">1: English</td></tr><tr><td colspan="2">2: French</td></tr><tr><td colspan="2">3: German</td></tr><tr><td colspan="2">4: Italian</td></tr><tr><td colspan="2">5: Dutch</td></tr><tr><td colspan="2">6: Swedish</td></tr><tr><td colspan="2">7: Spanish</td></tr></tbody></table>	Key operation/Display		0: Japanese		1: English		2: French		3: German		4: Italian		5: Dutch		6: Swedish		7: Spanish											
Key operation/Display																														
0: Japanese																														
1: English																														
2: French																														
3: German																														
4: Italian																														
5: Dutch																														
6: Swedish																														
7: Spanish																														
30	CE mark conformity control setting	Used to display the current setting of CE mark conformity control with the number at right. After entering the set value, press the start key, and the set value is stored. <table border="1"><thead><tr><th colspan="2">Key operation/Display</th></tr></thead><tbody><tr><td colspan="2">0: CE mark control OFF</td></tr><tr><td colspan="2">1: CE mark control ON</td></tr></tbody></table>	Key operation/Display		0: CE mark control OFF		1: CE mark control ON																							
Key operation/Display																														
0: CE mark control OFF																														
1: CE mark control ON																														
30	1	Machine sensor operation check	Used to check the sensors in the machine transport system with LED on the operation panel. <table border="1"><thead><tr><th colspan="2">Display</th></tr></thead><tbody><tr><td colspan="2">&lt;Lighting at sensor ON&gt;</td></tr><tr><td colspan="2">Paper entry sensor: Machine position JAM LED</td></tr><tr><td colspan="2">Duplex sensor: SPF JAM LED</td></tr><tr><td colspan="2">Paper exit sensor: JAM LED</td></tr><tr><td colspan="2">No. 2 cassette transport sensor: No. 2 cassette position JAM LED</td></tr><tr><td colspan="2">No. 3 cassette transport sensor: No. 3 cassette position JAM LED</td></tr><tr><td colspan="2">No. 4 cassette transport sensor: No. 4 cassette position JAM LED</td></tr></tbody></table>	Display		<Lighting at sensor ON>		Paper entry sensor: Machine position JAM LED		Duplex sensor: SPF JAM LED		Paper exit sensor: JAM LED		No. 2 cassette transport sensor: No. 2 cassette position JAM LED		No. 3 cassette transport sensor: No. 3 cassette position JAM LED		No. 4 cassette transport sensor: No. 4 cassette position JAM LED												
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No. 3 cassette transport sensor: No. 3 cassette position JAM LED																														
No. 4 cassette transport sensor: No. 4 cassette position JAM LED																														
41	2	OC document sensor adjustment	Used to read the document sensor input value with paper and perform the sensor detection level adjustment. For the adjustment procedure of the document sensor input value, refer to the previous descriptions.																											



Main code	Sub code	Contents	Details of operation	Initial value	Set range								
41	3	Document sensor light reception level display	<div>Used to display the light reception level and the detection level of the document sensor. (The sensor level adjusted with SIM 41-2 is displayed.)</div> <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Light reception/Detection level select: Magnification ratio display key</td><td>Display at the 3rd digit "A": Light reception level display "b": Document detection level lighting LED</td></tr><tr><td>Sensor select: Magnification ratio select key</td><td>Sensor A: A3 document size LED Sensor B: A4 document size LED Sensor C: A4R document size LED Sensor D: B4 document size LED</td></tr></table>	Key operation	Display	Light reception/Detection level select: Magnification ratio display key	Display at the 3rd digit "A": Light reception level display "b": Document detection level lighting LED	Sensor select: Magnification ratio select key	Sensor A: A3 document size LED Sensor B: A4 document size LED Sensor C: A4R document size LED Sensor D: B4 document size LED				
Key operation	Display												
Light reception/Detection level select: Magnification ratio display key	Display at the 3rd digit "A": Light reception level display "b": Document detection level lighting LED												
Sensor select: Magnification ratio select key	Sensor A: A3 document size LED Sensor B: A4 document size LED Sensor C: A4R document size LED Sensor D: B4 document size LED												
42	1	Developer counter clear	Used to clear the developer counter. *2										
43	1	Fusing temperature setting	<div>Used to display the current setting of the fusing temperature with the number at right. After selecting the fusing temperature with the magnification ratio display key, press the start key, and the set value is stored.</div> <table><tr><th>Key operation</th></tr><tr><td>Fusing temperature select: Magnification ratio display key</td></tr></table>	Key operation	Fusing temperature select: Magnification ratio display key								
Key operation													
Fusing temperature select: Magnification ratio display key													
46	1	Copy density level adjustment	<div>After completion of warmup, shading is performed and the currently set copy density level is displayed. For the adjustment procedure, refer to the previous descriptions.</div> <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Mode select: Mode select key</td><td>&lt;LED lighting at each mode selection&gt; Auto mode: AE LED Manual mode: TEXT LED Photo mode: PHOTO LED Toner save mode: TEXT/PHOTO LED</td></tr></table>	Key operation	Display	Mode select: Mode select key	<LED lighting at each mode selection> Auto mode: AE LED Manual mode: TEXT LED Photo mode: PHOTO LED Toner save mode: TEXT/PHOTO LED		1 ~ 99				
Key operation	Display												
Mode select: Mode select key	<LED lighting at each mode selection> Auto mode: AE LED Manual mode: TEXT LED Photo mode: PHOTO LED Toner save mode: TEXT/PHOTO LED												
	2	FAX density level adjustment	<div>After completion of warmup, shading is performed and the currently set FAX density level is displayed. For the adjustment procedure, refer to the previous descriptions.</div> <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Mode select: Mode select key</td><td>&lt;LED lighting at each mode selection&gt; Standard mode: Standard LED Small character mode: Small character LED Fine mode: Fine LED Ultra fine mode: Ultra fine LED Photo mode: Photo LED</td></tr></table>	Key operation	Display	Mode select: Mode select key	<LED lighting at each mode selection> Standard mode: Standard LED Small character mode: Small character LED Fine mode: Fine LED Ultra fine mode: Ultra fine LED Photo mode: Photo LED		1 ~ 99				
Key operation	Display												
Mode select: Mode select key	<LED lighting at each mode selection> Standard mode: Standard LED Small character mode: Small character LED Fine mode: Fine LED Ultra fine mode: Ultra fine LED Photo mode: Photo LED												
48	1	Main scanning (front/rear) direction magnification ratio adjustment (Copy/FAX/OC-SPF common)	<div>After completion of warmup, shading is performed and the currently set main scanning (front/rear) direction magnification ratio adjustment is performed. For the adjustment procedure, refer to the previous descriptions.</div> <table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Adjustment mode select: Magnification ratio key</td><td>Auto magnification ratio adjustment: AE LED</td></tr><tr><td>Manual main scanning direction magnification ratio adjustment</td><td>Manual magnification ratio adjustment: TEXT LED</td></tr><tr><td>Set value: Numeric keys</td><td></td></tr></table>	Key operation	Display	Adjustment mode select: Magnification ratio key	Auto magnification ratio adjustment: AE LED	Manual main scanning direction magnification ratio adjustment	Manual magnification ratio adjustment: TEXT LED	Set value: Numeric keys			1 ~ 99
Key operation	Display												
Adjustment mode select: Magnification ratio key	Auto magnification ratio adjustment: AE LED												
Manual main scanning direction magnification ratio adjustment	Manual magnification ratio adjustment: TEXT LED												
Set value: Numeric keys													

\*1: Each counter display method

To display 12345: 123 (0.75 sec) → Blank (0.35sec) → 456 (0.75 sec) → Blank (1.0 sec) → repetition

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35sec) → 000 (0.75 sec) → Blank (1.05 sec) → Repetition



Main code	Sub code	Contents	Details of operation		Initial value	Set range					
48	2	OC mode sub scanning direction magnification ratio adjustment in copying	After completion of warmup, shading is performed and the currently set OC mode sub scanning direction magnification ratio adjustment in copying is performed. For the adjustment procedure, refer to the previous descriptions.			1 ~ 99					
	<table><tr><th colspan="2">Key operation</th></tr><tr><td colspan="2">OC mode sub scanning direction copy magnification ratio in copying: Numeric keys</td></tr></table>		Key operation				OC mode sub scanning direction copy magnification ratio in copying: Numeric keys				
	Key operation										
	OC mode sub scanning direction copy magnification ratio in copying: Numeric keys										
5	SPF mode sub scanning direction magnification ratio adjustment in copying	After completion of warmup, shading is performed and the currently set OC mode sub scanning direction magnification ration adjustment in copying is performed. For the adjustment procedure, refer to the previous descriptions.			1 ~ 99						
<table><tr><th colspan="2">Key operation</th></tr><tr><td colspan="2">SPF mode sub scanning direction magnification ratio in copying: Numeric keys</td></tr></table>		Key operation				SPF mode sub scanning direction magnification ratio in copying: Numeric keys					
Key operation											
SPF mode sub scanning direction magnification ratio in copying: Numeric keys											
6	OC mode sub scanning direction magnification ratio adjustment in FAX	After completion of warmup, shading is performed and the currently set OC mode sub scanning direction magnification ratio adjustment in FAX is performed. For the adjustment procedure, refer to the previous descriptions.			1 ~ 99						
<table><tr><th colspan="2">Key operation</th></tr><tr><td colspan="2">OC mode sub scanning direction magnification ratio in FAX: Numeric keys</td></tr></table>		Key operation				OC mode sub scanning direction magnification ratio in FAX: Numeric keys					
Key operation											
OC mode sub scanning direction magnification ratio in FAX: Numeric keys											
7	SPF mode sub scanning direction magnification ratio adjustment in FAX	After completion of warmup, shading is performed and the currently set SPF mode sub scanning direction magnification ratio in FAX is performed. For the adjustment procedure, refer to the previous descriptions.			1 ~ 99						
<table><tr><th colspan="2">Key operation</th></tr><tr><td colspan="2">SPF mode sub scanning direction magnification ratio in FAX: Numeric keys</td></tr></table>		Key operation				SPF mode sub scanning direction magnification ratio in FAX: Numeric keys					
Key operation											
SPF mode sub scanning direction magnification ratio in FAX: Numeric keys											
50	1	Copy image position adjustment	After completion of warmup, shading is performed and the currently set value is displayed. For the adjustment procedure, refer to the previous descriptions.			1 ~ 99					
	<table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Adjustment mode select: Exposure mode select key Set value: Numeric keys</td><td>Auto: Laser radiation timing adjustment Manual: Lead edge void adjustment Photo: Left edge void adjustment Auto + Manual + Photo: Rear edge void adjustment</td></tr></table>		Key operation	Display			Adjustment mode select: Exposure mode select key Set value: Numeric keys	Auto: Laser radiation timing adjustment Manual: Lead edge void adjustment Photo: Left edge void adjustment Auto + Manual + Photo: Rear edge void adjustment			
Key operation	Display										
Adjustment mode select: Exposure mode select key Set value: Numeric keys	Auto: Laser radiation timing adjustment Manual: Lead edge void adjustment Photo: Left edge void adjustment Auto + Manual + Photo: Rear edge void adjustment										
10	Paper off center adjustment	After completion of warmup, shading is performed and the currently set off center adjustment of each paper feed port is displayed. For the adjustment procedure, refer to the previous descriptions.									
		<table><tr><th>Key operation</th><th>Display</th></tr><tr><td>Paper feed port tray select: Paper select key Off center adjustment value: numeric keys</td><td>Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED No. 3 cassette: No. 3 cassette select LED No. 4 cassette: No. 4 cassette select LED</td></tr></table>		Key operation	Display	Paper feed port tray select: Paper select key Off center adjustment value: numeric keys	Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED No. 3 cassette: No. 3 cassette select LED No. 4 cassette: No. 4 cassette select LED				
Key operation	Display										
Paper feed port tray select: Paper select key Off center adjustment value: numeric keys	Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED No. 3 cassette: No. 3 cassette select LED No. 4 cassette: No. 4 cassette select LED										



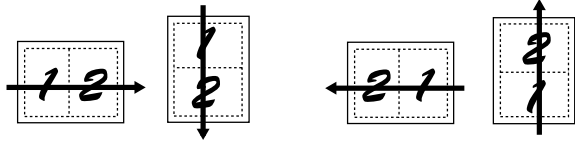
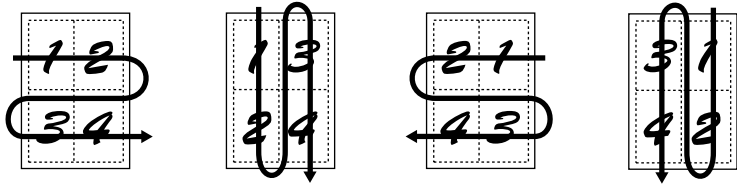
Main code	Sub code	Contents	Details of operation	Initial value	Set range		
50	13	OC mode document off center adjustment	After completion of warmup, shading is performed and the currently set off center adjustment value for the document in OC reading is displayed. For the adjustment procedure, refer to the previous descriptions. <table border="1"><tr><td>Key operation</td></tr><tr><td>Off center adjustment value: Numeric keys</td></tr></table>	Key operation	Off center adjustment value: Numeric keys		
	Key operation						
Off center adjustment value: Numeric keys							
16	SPF mode document off center adjustment	After completion of warmup, shading is performed and the currently set off center adjustment value for the document in SPF reading is displayed. For the adjustment procedure, refer to the previous descriptions. <table border="1"><tr><td>Key operation</td></tr><tr><td>Off center adjustment value: Numeric keys</td></tr></table>	Key operation	Off center adjustment value: Numeric keys			
Key operation							
Off center adjustment value: Numeric keys							
51	2	Resist amount adjustment	After completion of warmup, shading is performed and the currently set resist amount adjustment value is displayed. <table border="1"><tr><td>Key operation</td></tr><tr><td>Resist amount adjustment: Numeric keys</td></tr></table>	Key operation	Resist amount adjustment: Numeric keys		
Key operation							
Resist amount adjustment: Numeric keys							
63	1	Shading data check	The copy lamp is shifted to the shading position and it is lighted with the reference voltage at AD conversion fixed (Vref- = 0.5V, Vref+ = 4.5V). This state is kept for 10 sec, and the level of one pixel at the center is displayed for each second. <table border="1"><tr><td>Display</td></tr><tr><td>Display section: Shading data</td></tr></table>	Display	Display section: Shading data		
Display							
Display section: Shading data							
64	1	Self print mode	Disregards the optical system and performs self printing in 1 by 2mode. <table border="1"><tr><td>Key operation</td></tr><tr><td>Copy quantity setting: Numeric keys</td></tr></table>	Key operation	Copy quantity setting: Numeric keys		
Key operation							
Copy quantity setting: Numeric keys							
69	1	Program download mode	When entering this mode, the machine in the download mode and accepts no key entry. When the power is turned off, the download mode is cleared.				



## [9] USER PROGRAM

The factory setting can be changed according to the operating conditions.

### 1. User program functions







Function	Outline	Default
Auto clear	When a certain time is passed after completion of the machine operation, the mode is returned to the initial state automatically. The time to return to the initial state can be set in the range of 30 ~ 120 sec by the unit of 30 sec. This function can be canceled.	60 sec
Pre-heat	When the machine is left unused with the power ON, the power consumption level is automatically lowered to about 60W <sub>h</sub> (*1). The time to operate this function can be set in the range of 30 sec ~ 120 sec by the unit of 30 sec. This function can be canceled. When this function operates, the pre-heat lamp on the operation panel lights up. To cancel the pre-heat state, press any key on the operation panel. (When the START key is pressed, pre-heat is canceled and copying is started.) This function is canceled with the document is set or the tray is pulled out.	90 sec
Auto power shut off passing time	When the machine is left unused with the power ON, the power consumption is automatically lowered to about 4.8W <sub>h</sub> (*1). The time to operate this function can be set in the range of 30 min to 240 min. When this function operates, all the lamps except for the pre-heat lamp turn off. To cancel the auto power shut off state, press the START key.	30 min
Stream feeding mode (with SPF/R-SPF installed)	After making copy with SPF/R-SPF, the document feed display lamp blinks, set the document, and the document is automatically fed.	Cancel
Auto power shut off setting	The auto power shut off function can be canceled.	Setting
2 in 1/4 in 1 solid line frame setting (with electronic sort board, SPF/R-SPF installed)	Images on two or more pages are copied on one sheet of paper (2 in 1/4 in 1). When this function is used, copying can be made with the solid lines at the boundaries of images.	Setting
Rotation copy (With electronic sort board installed)	When the paper auto selection function is operating, if there is no paper of the suitable size or the suitable direction, paper of the same size but of different direction is automatically selected and the document images are rotated by 90 degrees to copy. The magnification ratio auto select function operates and rotates document images by 90 degrees to make proper copy when the document images and the paper direction differ from each other.	Cancel
Paper auto selection	The paper of the same size as the document size selected by the document size set key (A3, B4, A4, A4R, B5, B5R 11" × 17", 8.5" × 14", 8.5" × 13", 8.5" × 11", 8.5" × 11"R, 8.5" × 5.5" only) is automatically selected. This function is canceled.	Setting
Tray auto selection (with 1-step paper feed unit, 2-step paper feed unit installed)	The paper of the same size as the document size selected by the document size set key (A3, B4, A4, A4R, B5, B5R 11" × 17", 8.5" × 14", 8.5" × 13", 8.5" × 11", 8.5" × 11"R, 8.5" × 5.5" only) is automatically selected. This function is canceled.	Setting
Department counter	Refer to "3. Department counter setting."	
Edge erase (with electronic sort board installed)	Shades around images and shades at the binding margin can be erased by this function. The erase range can be set in the range of 0 ~ 20mm by the unit of 5mm.	10mm
2 in 1 layout (with electronic sort board, SPF/R-SPF installed)	The layout pattern for copying images of two pages on one page can be selected.  Pattern A                      Pattern B	Pattern A
4 in 1 layout (with electronic sort board, SPF/R-SPF installed)	The layout pattern for copying images of four pages on one page can be selected.  Pattern A                      Pattern B                      Pattern C                      Pattern D	Pattern A

\*1: The power consumption in pre-heat, auto power shut off depends on the operating conditions.



## 2. Setting change procedure

Example: Changing the time for operating the auto clear function (from 60 sec to 120 sec)

- 1) Press and hold the density adjustment key  for 5 sec to start setting.
  - When      lamps start blinking at the same time, the copy quantity display shows "--" the digit of 10 blinking.
- 2) Select the function code with the numeric key.
  - The code of the selected function is displayed (blinking) on the digits of 10 and 100.
  - For auto clear, select 1.
  - Select the suitable code according to the table below.

### User program setting contents

Function	Function code	Setting code
Auto clear	1	0 (Cancel)
		1 (30 sec)
		*2 (60 sec)
		3 (90 sec)
		4 (120 sec)
Pre-heat	2	0 (Cancel)
		1 (30 sec)
		2 (60 sec)
		*3 (90 sec)
		4 (120 sec)
Auto power shut off passing time (*2)	3	*1 (30 sec)
		2 (60 sec)
		3 (90 sec)
		4 (120 sec)
		5 (240 sec)
Stream feeding mode	4	*0 (Cancel)
		1 (Setting)
Auto power shut off function setting (*2)	5	0 (Cancel)
		*1 (Setting)
2 in 1/4 in 1 solid frame setting	6	*0 (Cancel)
		1 (Setting)
Rotation copy	7	0 (Cancel)
		*1 (Setting)
Paper auto selection	8	0 (Cancel)
		*1 (Setting)
Tray auto selection	9	0 (Cancel)
		*1 (Setting)
Department counter (*1)	10 ~ 15	
Edge erase	16	0 (0mm)
		1 (5mm)
		*2 (10mm)
		3 (15mm)
		4 (20mm)
2 in 1 layout (*3)	17	*1 (Pattern A) 2 (Pattern B)
4 in 1 layout (*3)	18	*1 (Pattern A)
		2 (Pattern B)
		3 (Pattern B)
		4 (Pattern B)

\* Setting at the factory shipping

\*1. For the setting procedure, refer to "3. Department counter."

\*2. With the auto power shut off canceled (function code "5", set code "0", auto power shut off time setting code "3"), the mode enters the auto power shut off setting mode automatically.

\*3. For the layout pattern, refer to page 9-1.

- The number of the selected function blinks on the digit of 1 or the copy quantity display.

Cancel: When any key is pressed by mistake, press the clear key and press the proper key.

3) Press the START key.

- The selected function code is changed from blinking to lighting.
- The currently set code blinks on the digit of 1.

4) Select the setting code with the numeric key.

- For setting to 80 sec, select [3].
- Make setting referring to the setting codes of "User program setting contents."






Cancel: When any wrong key is pressed, press the clear key and resume from procedure 2.

5) Press the START key,

- The selected setting code is changed from blinking to lighting. The setting is completed with the above operation.

Memo: To set another function, press the clear key after this procedure and resume from procedure 2.

6) Press the density adjustment key  to end the setting.


-      lamps go off. The copy quantity display returns to the normal display.






## 3. Department counter setting

Note: The department counter is effective only in copying. Counting is not made in FAX and printer output.

When the department counter is set, the copy count for each department (max. 20 dept.) can be made and displayed when necessary.

With the department counter set, copying cannot be made unless the registered number (password number of 3 digits) is entered.

1) Press and hold the density adjustment key  for about 5 sec to start setting.

-      lamps start blinking at the same time, and the copy quantity display displays "--" and the digit of 10 blinks.

2) Select the function code with the numeric key.

- Refer to the function code for setting.

### Setting contents of department counters

Function	Function code	
Setting content	10	Department counter setting or cancel. Factory setting: Cancel
Department counter setting/cancel	11	Department number recording. Max. 20 department can be recorded.
Department number recording	12	Recorded department number is changed.
Department number delete	13	Recorded number is deleted.
Copy quantity display (Total)	14	The copy quantity in each department is displayed. The count is made up to 49,999 sheets. From that, counting is started from 0.
Copy quantity delete (Total delete)	15	The counted copy quantity is canceled. The count of each department or that of all the departments can be deleted.

- The entered number blinks on the digits of 100 and 10 on the copy quantity display.

Cancel: When a wrong key is pressed, press the clear key and enter the correct key.




3) Press the START key.






- The selected function code is changed from blinking to lighting.
- The currently set code blinks on the digit of 1.

Cancel: When the "E" (error code) is lighted on the digit of 1, press the clear key and return to procedure 2.

4) Perform setting of the department counter.

Perform setting referring to "F.Copy quantity delete" in "A. Department counter setting/cancel."

5) Press the density adjustment key  to end the setting procedure.

-      lamps go off.
- The copy quantity display returns to the normal display.

### A. Department counter setting/cancel (Function code: 0)

Used to set or cancel the department counter. When this setting is made, the copy quantity display lights up with "--."

Under this state, the department number in 3 digits must be entered to operate the machine.

After entering the function code "0," use the numeric key to set or cancel the department counter.

1) To set the department counter, select "1." To cancel, select "0." Then press the START key.

Memo: After this setting, use the "Department number recording" to record the department number of each department.  
(Max. 20 departments can be recorded.)

2) Press the clear key.

### B. Department number recording (Function code: 11)

Used to record the department number.

When the function code "1" is entered, the copy quantity display blinks with "--."

When the recorded department number reaches 20, the error code of "11E" is displayed.

1) Use the numeric key to enter the number of 3 digits (except for 000) and press the START key.

- When the recorded number or "000" is entered, the entered number blinks. In this case, enter another number.
- To register another department number, repeat the same procedure 1) above.

2) After completion of recording, press the clear key.

- The registered department number and each department name must be recorded. (Since the department name cannot be registered, they must be recorded for total calculation.)

### C. Department number change (Function code: 12)

Used to change the department number.

Enter the function code "12" and select the department number to be registered.

If there is no registered department number, the error code of "12E" is displayed.

1) Select the department number with % key, and press the START key.

- The copy quantity display shows "- - - ."

2) Use the numeric key to enter a new department number (3 digits except for 000), and press the START key.

- When the recorded number or "000" is entered, the entered number blinks. In this case, enter another number.
- To register another department number, repeat the same procedures 1) and 2) above.

3) After completion of changing, press the clear key.

### D. Department number delete (Function code 13)

Delete the department number.

Enter the department code (13) and select all departments clear or specified department clear.

When there is no registered department number, the error code "13E" is displayed.

#### (1) All departments clear

- 1) Press "1" key.
- 2) Press the START key.

#### (2) Specified department clear

- 1) Press "0" key.
- 2) Select the department number to be deleted with % key.
- 3) Press the START key.

### E. Copy quantity display (sum total) (Function code: 14)

The copy quantity of each department is displayed.

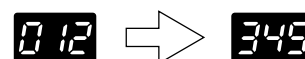
Enter the function code "14" and select the department number of which the total copy quantity is to be displayed.

If there is no registered department number, the error code "14E" is displayed.

- 1) Select the department number with % key.
- 2) Press and hold "0" key, and the copy quantity will be displayed.

- The copy quantity is displayed in two steps.

(Example) Copy quantity: 12, 345



- To display the copy quantity of another department, repeat the same procedure 1) and 2).

3) Press the clear key to terminate the procedure.

### F. Copy quantity clear (total clear) (Function code: 15)

The copy quantity of each department is cleared.

After entering the function code "15", select all department clear or specified department clear.

If there is no registered department, the error code "15E" is displayed.

#### (1) All department total clear

- 1) Press "1" key.
- 2) Press the START key.

#### (2) Specified department clear

- 1) Press "0" key.
- 2) Select the department number with % key.
- 3) Press the START key.



# [10] TROUBLE CODE LIST

Classification	Function	Main code	Sub code	Trouble name	Remark
Electrical system error	Copier	H2	00	Thermistor open error	Thermistor is open
		H3	00	Fusing temperature abnormality (Abnormally high temperature detection)	Abnormally high fusing temperature
		H4	00	Fusing temperature abnormality (Abnormally low temperature detection)	Abnormally low fusing temperature
		CC		Media sensor error	Document detection error
		U2	04	EEPROM communication error	EEPROM abnormality
			11	Counter SAM error	EEPROM counter area SAM abnormality
			12	Adjustment value SAM error	EEPROM adjustment value memory area SAM abnormality
		F5	02	Copy lamp error	Copy lamp disconnection
	FAX	F6	00	FAX board communication trouble	
			10	FAX board trouble	
			80	FAX board communication trouble (Protocol)	
			81	FAX board communication trouble (Parity)	
			82	FAX board communication trouble (Overrun)	
			84	FAX board communication trouble (Framing)	
			88	FAX board communication trouble (Timeout)	
	Printer	F9	00	Printer board communication trouble	
			10	Printer board trouble	
			80	Printer board communication trouble (Protocol)	
			81	Printer board communication trouble (Parity)	
			82	Printer board communication trouble (Overrun)	
			84	Printer board communication trouble (Framing)	
			88	Printer board communication trouble (Timeout)	
	Electronic sort	E1	00	Electronic sort board communication trouble	
			10	Electronic sort board trouble	
			11	ASIC error	ASIC abnormality
			12	Image compression error	JBIG IC abnormality
			13	Flash ROM error	Program ROM abnormality
			14	RAM error	Work RAM abnormality
			15	Page memory error	Print buffer abnormality
			16	SIMM error	Compression storing memory abnormality
			17	Image rotating RAM error	Rotating RAM abnormality
			80	Electronic sort board communication trouble (Protocol)	
			81	Electronic sort board communication trouble (Parity)	
			82	Electronic sort board communication trouble (Overrun)	
			84	Electronic sort board communication trouble (Framing)	
			88	Electronic sort board communication trouble (Timeout)	



Classification	Function	Main code	Sub code	Trouble name	Remark
Electrical system error	Operation	U9	00	Operation board communication trouble	
			80	Operation board communication trouble (Protocol)	
			81	Operation board communication trouble (Parity)	
			82	Operation board communication trouble (Overrun)	
			84	Operation board communication trouble (Framing)	
			88	Operation board communication trouble (Timeout)	
	Zero cross	L8	01	Zero cross trouble	
Optical system error	CCD	E7	04	CCD white level trouble	CCD white level abnormality
			05	CCD black level trouble	CCD black level abnormality
			12	Shading trouble	White correction is not completed with the specified number of operations
	LSU	E7	03	LSU trouble	LSU abnormality
Mechanical system error	Mirror motor	U3	29	Mirror home position error	
		L1	00	Mirror feed trouble	
		L3	00	Mirror return trouble	
	Main motor	L4	01	Main motor lock	
	LSU	L6	10	Polygon motor trouble	
	Shifter	F1	06	Shifter motor trouble	
	Job separator	L4	10	Job separator motor trouble	Job separator function
Others	Operation	U95		Operation connection abnormality	Panel individual display caused by abnormal panel connection



# [11] MAINTENANCE

## 1. Maintenance table

X: Check (Clean, adjust, or replace when required.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Unit name	Part name		When calling or replacing the kit	150k
Transfer section		Charger unit	○	○
		Transfer paper guide	○	○
Optical section	Lamp unit	Reflector	○	○
		Mirror	○	○
	No. 2/3 mirror unit	Mirror	○	○
		Pulley	×	×
	CCD peripheral	Lens	○	○
	Glass	Table glass	○	○
		White plate	○	○
	Other	Drive wire	×	×
		Rail	×☆	×☆
		Document cover	○	○
		Document size sensor	○	○
LSU		Dust-proof glass	○	○
Paper feed section	Multi paper feed section	Takeup roller	○	○
		Paper feed roller	○	○
		Spring clutch	○☆	○☆
	Cassette section	Paper feed roller	○	○
		Spring clutch	○☆	○☆
Paper transport section		PS roller	○	○
		Transport (paper exit) rollers	○	○
		Spring clutch	○☆	○☆
Fusing section		Upper heat roller	○	▲
		Pressure roller	○	○
		Pressure roller bearing	×	○☆
		Upper separation pawl	×	○
		Lower separation pawl	×	○
Drive section		Gears	×☆	×☆
		Belts	×	○



## [12] DISASSEMBLY AND ASSEMBLY

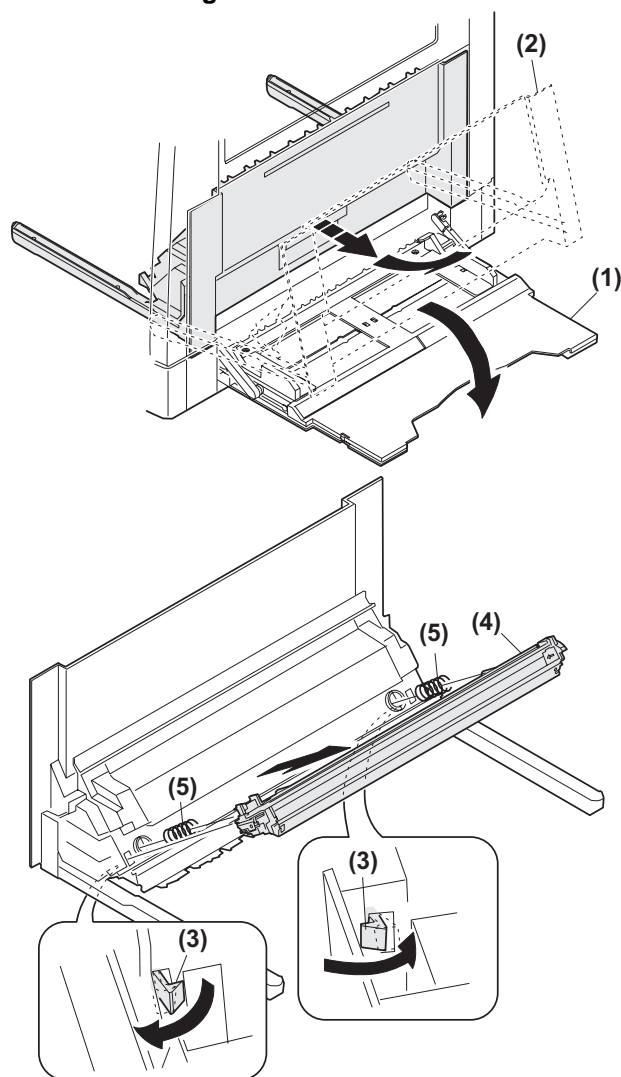
**WARNING:** Before performing the disassembly procedure, be sure to remove the power cord to prevent against an electric shock.

No.	Item	Page
1	High voltage section	12-1
2	Optical section	12-1
3	Fusing section	12-2
4	Paper exit section	12-4
5	MCU	12-6
6	Optical frame unit	12-6
7	LSU	12-6
8	Tray paper feed section/Paper transport section	12-7
9	Manual multi paper feed section	12-8
10	Power section	12-10
11	Developing section	12-11
12	Process section	12-12

### 1. High voltage section

No.	Content
A	Transfer charger unit
B	Charger wire

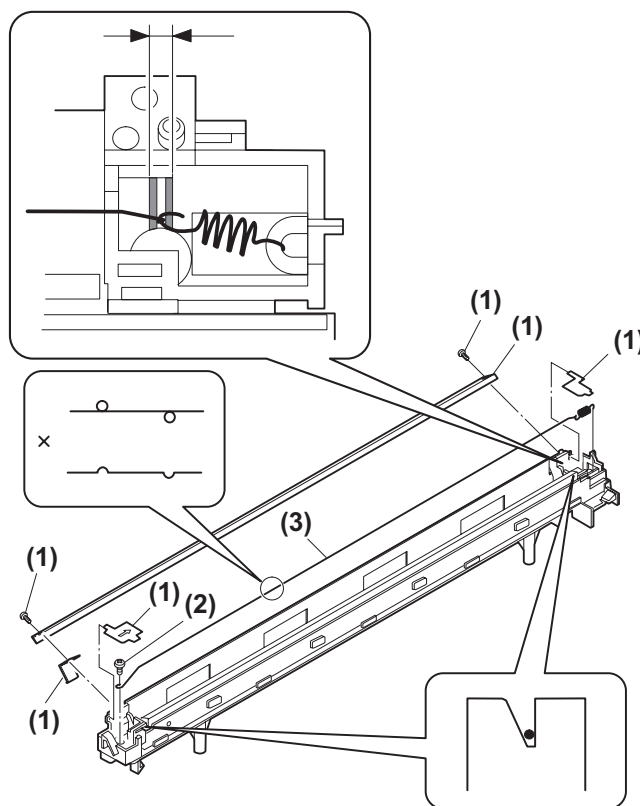
#### A. Transfer charger unit



### B. Charger wire

Installation: The spring tip must be between two reference ribs.

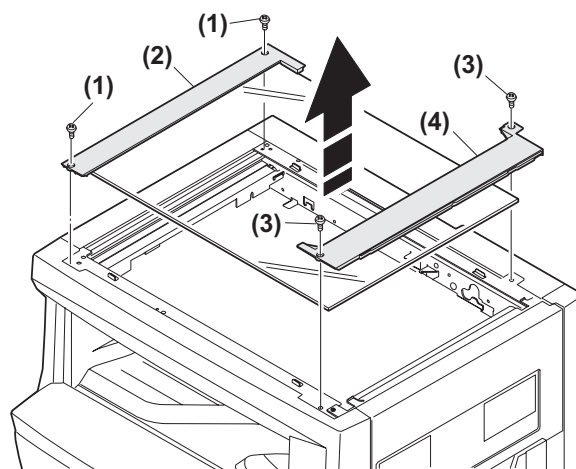
- The charger wire must be free from twist or bending.
- Be sure to put the charger wire in the V groove.



### 2. Optical section

No.	Content
A	Table glass
B	Copy lamp unit
C	Copy lamp
D	Lens unit

#### A. Table glass



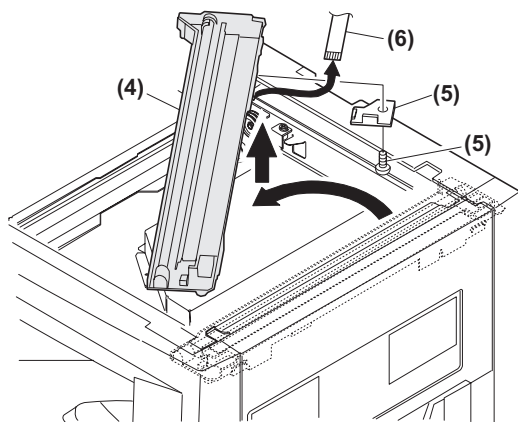
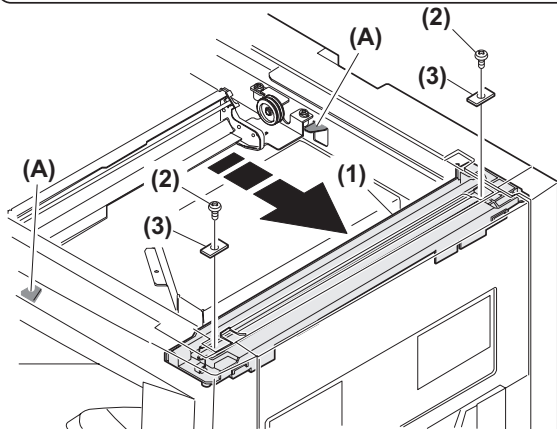
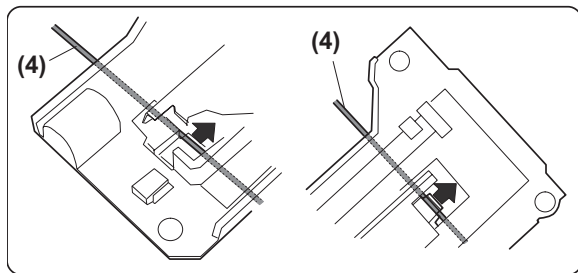


## B. Copy lamp unit

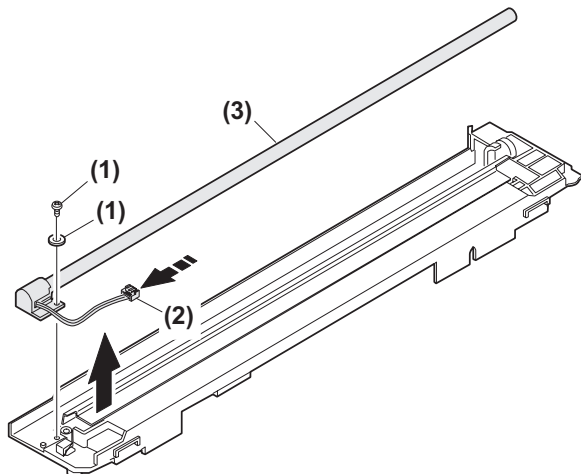
Disassembly: Be sure to put No. 2/3 mirror unit to the positioning plate (A).

Assembly: Put the notched surface of wire holder (3) downward, tighten temporarily, and install.

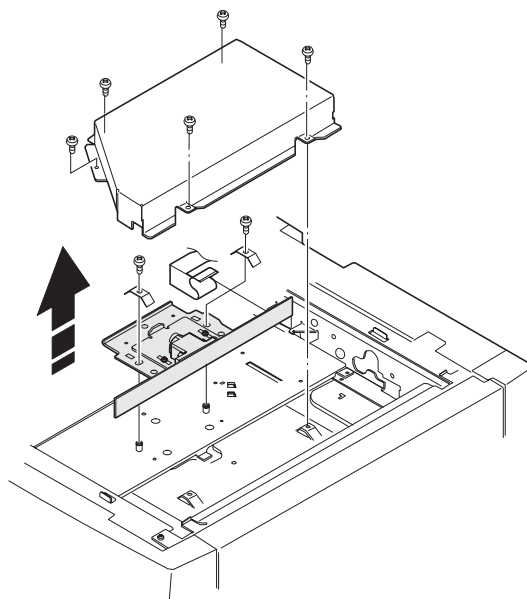
Adjustment: Main scanning direction distortion balance adjustment



## C. Copy lamp



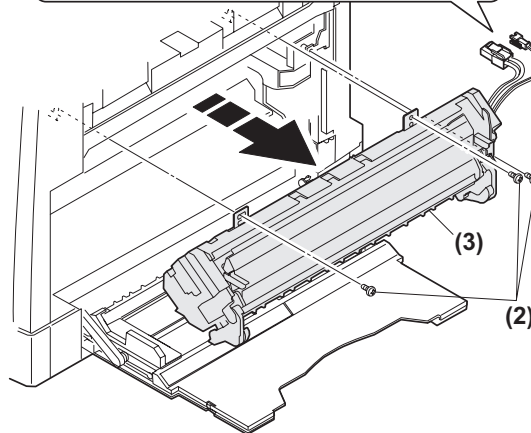
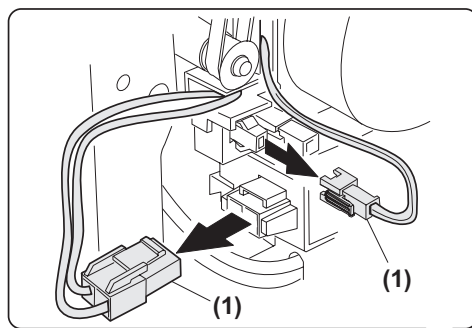
## D. Lens unit



## 3. Fusing section

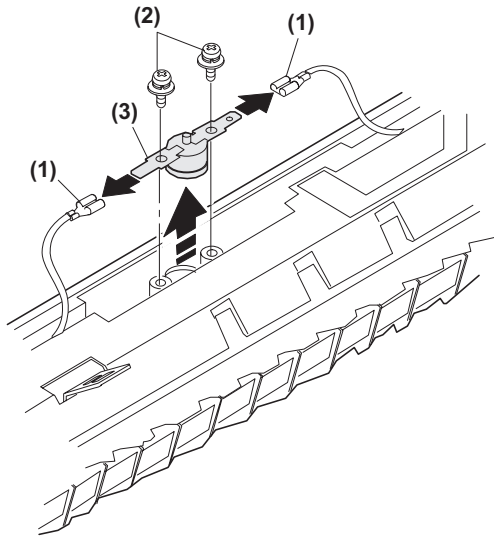
No.	Contents
A	Fusing unit
B	Thermostat
C	Thermistor
D	Heater lamp
E	Upper heat roller
F	Separation pawl
G	Lower heat roller

### A. Fusing unit removal



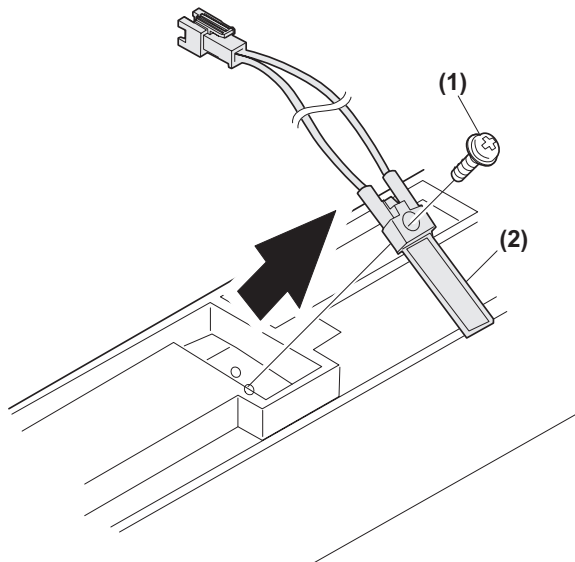


## B. Thermostat



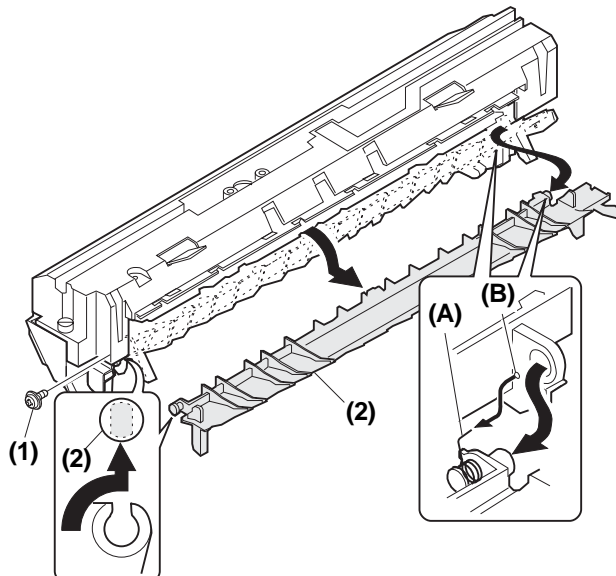
## C. Thermistor

Installation: Check that the thermistor is in contact with the upper heat roller.

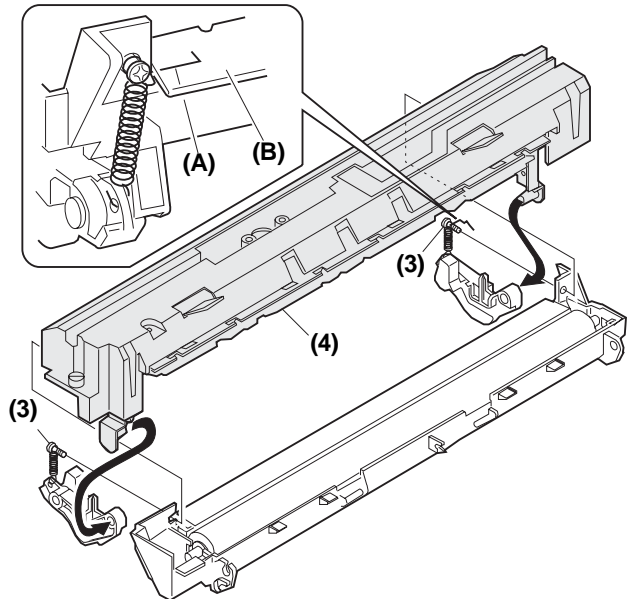


## D. Heater lamp

Assembly: Insert the spring (A) into the hole (B) in the fusing frame.

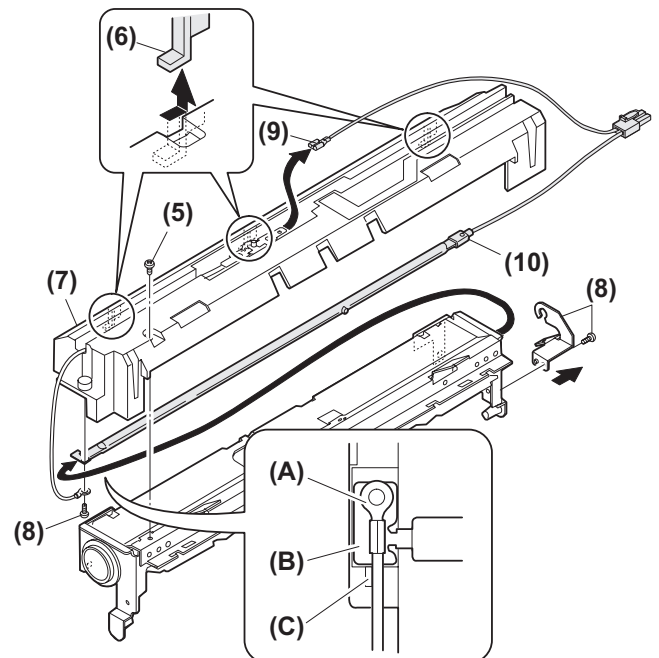


Assembly: Put the paper guide earth spring (A) under the paper guide (B) before fusing.



Disassembly: There are three pawls on the fusing cover. Remove the screws and slide the fusing cover to the right to remove.

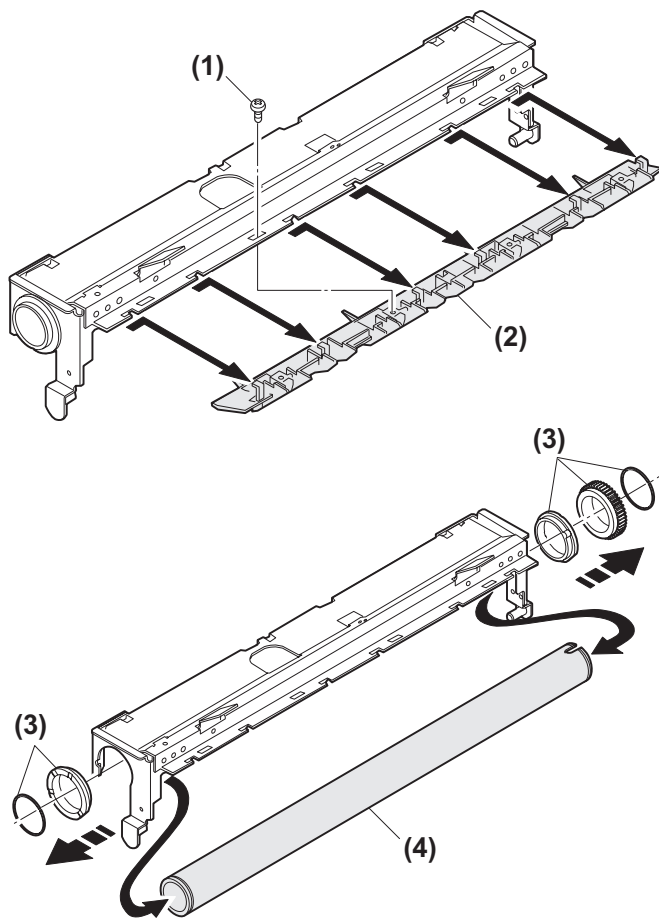
The heater lamp is fixed on the fusing cover with a screw. Slide the fusing cover to the front and remove the screw, then remove the heater lamp.



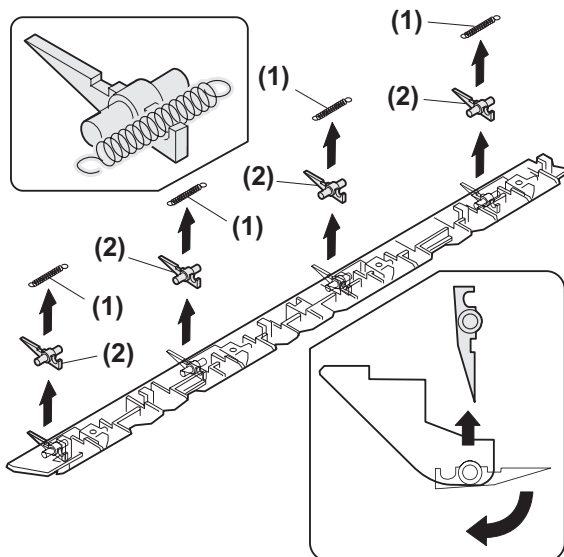
Assembly: Put the fusing harness (A) on the heater lamp (B) as shown in the figure and fix them together. Place the fusing harness inside the rib (C).



### E. Upper heat roller

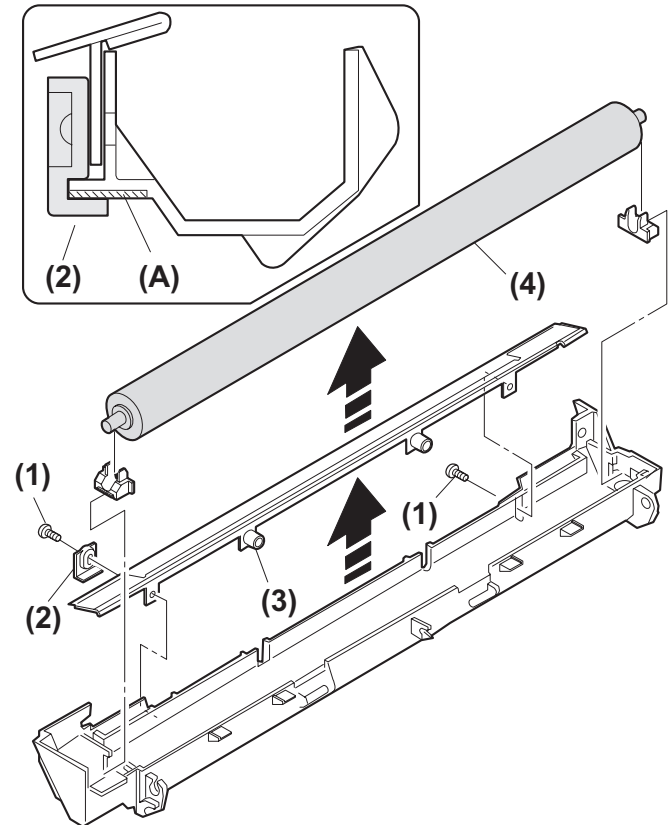


### F. Separation pawl



### G. Lower heat roller

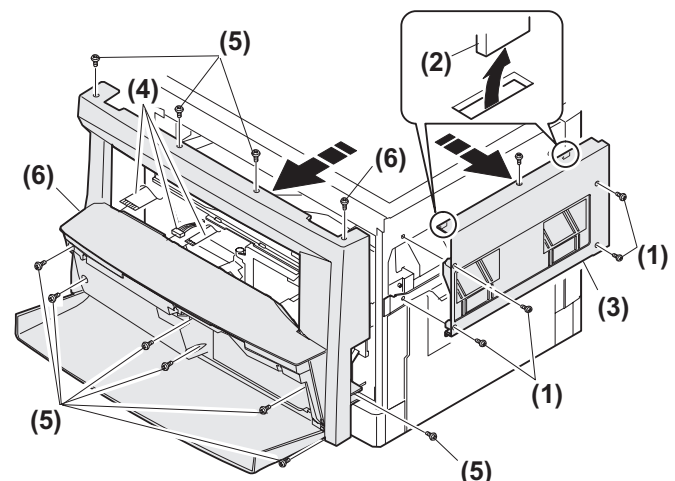
Assembly: When installing the paper guide (3) before fusing, tighten the paper guide fixing plate (2) so that the paper guide fixing plate (2) is in contact with the frame bottom section (A) under fusing.



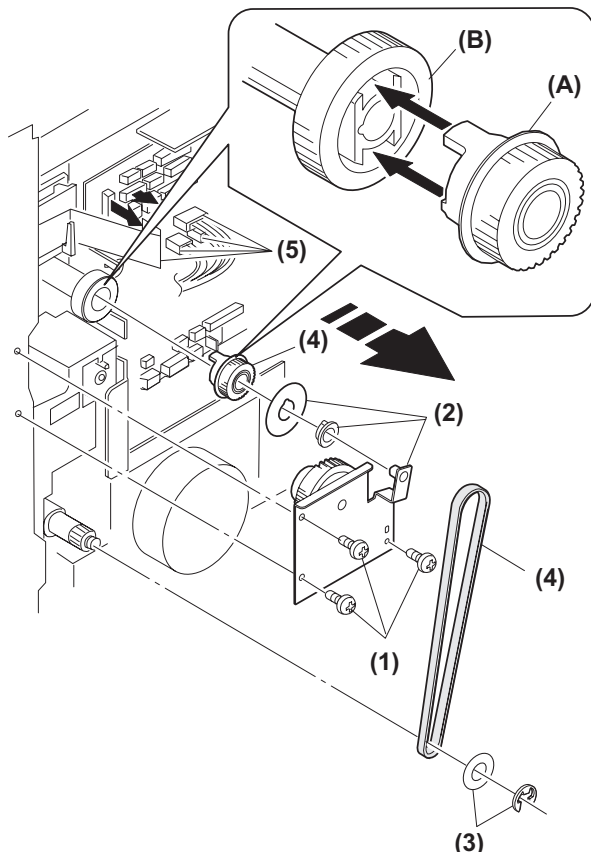
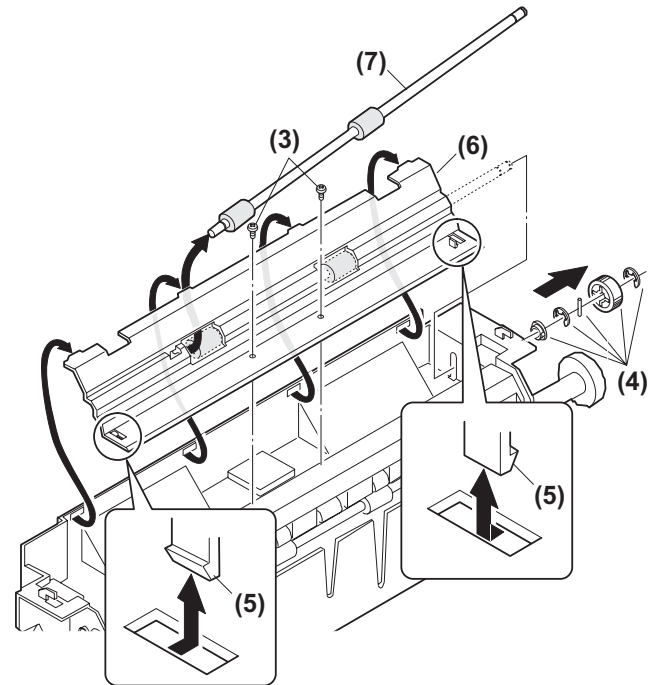
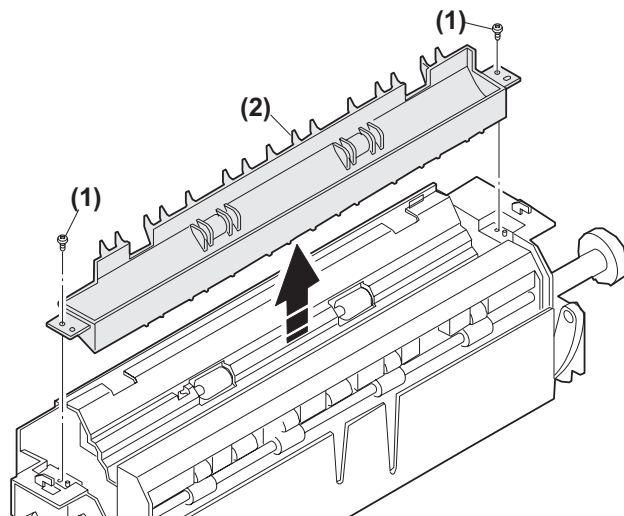
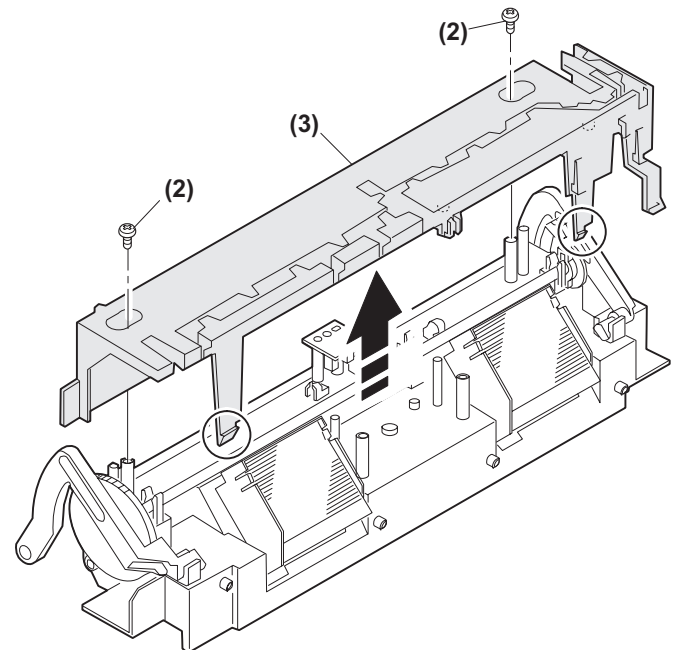
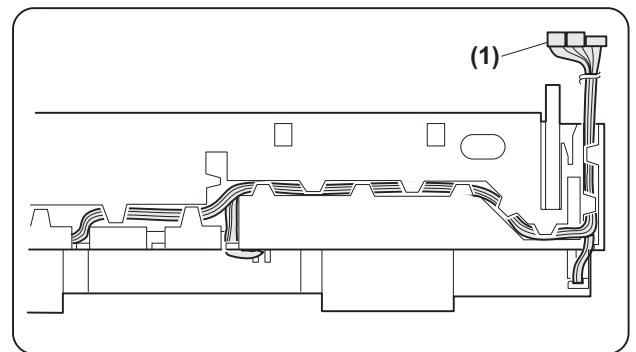
### 4. Paper exit section

No.	Content
A	Front cabinet unit/Right cabinet unit
B	Paper exit unit
C	Transport roller
D	Paper exit roller

#### A. Front cabinet unit, right cabinet disassembly

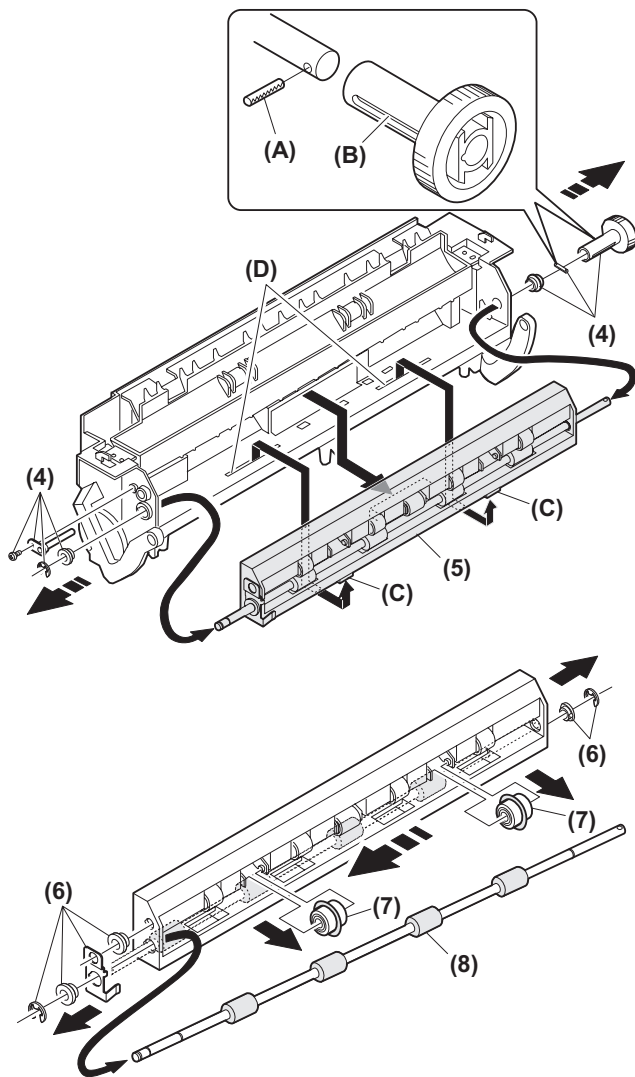




**B. Paper exit unit****C. Transport roller****D. Paper exit roller**

Assembly: Insert the spring pin so that the waveform (A) of the spring pin faces in the longitudinal direction of the paper exit drive gear long hole (B).  
Be sure to insert two ribs (C) into the groove (D).



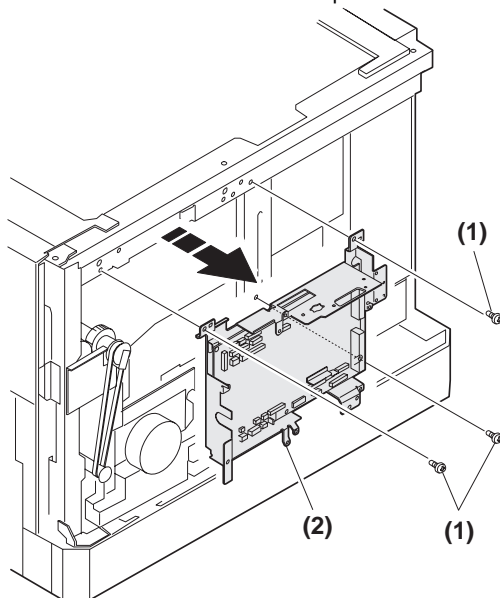


## 5. MCU

No.	Content
A	MCU

### A. MCU disassembly

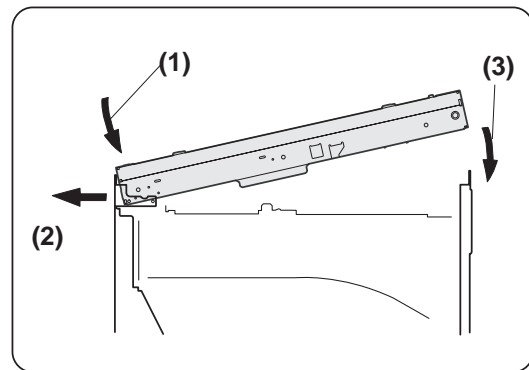
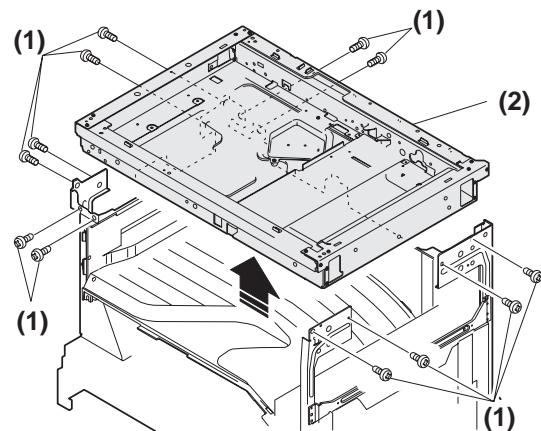
Note: When replacing the MCU PWB, be sure to replace the EEPROM of the MCU PWB to be replaced.



## 6. Optical frame unit

No.	Content
A	Optical frame unit

### A. Optical frame unit

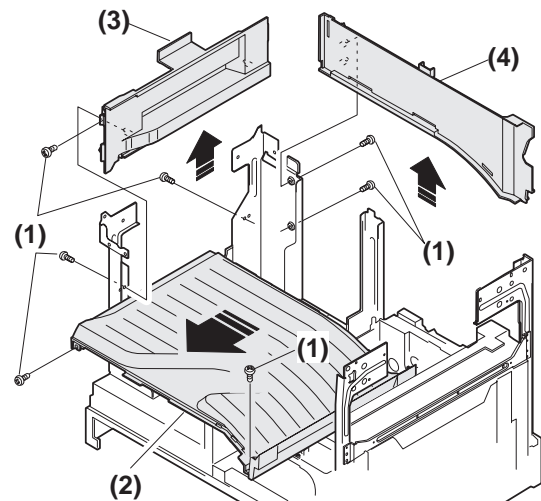


Installation: Install the optical unit in the sequence shown above.

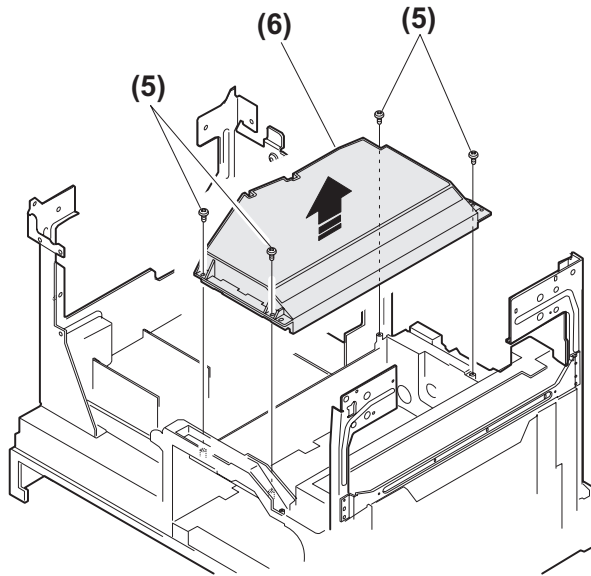
## 7. LSU

No.	Content
A	LSU unit

### A. LSU unit





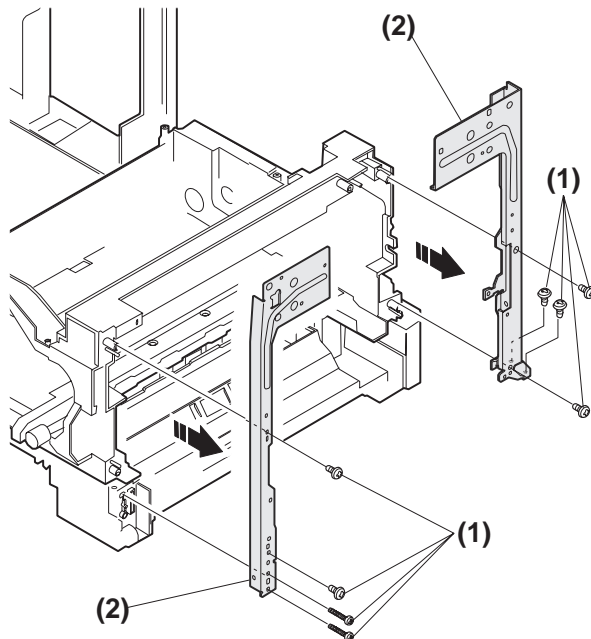


Adjustment: • Image lead edge position adjustment  
• Image left edge position adjustment  
• Paper off-center adjustment

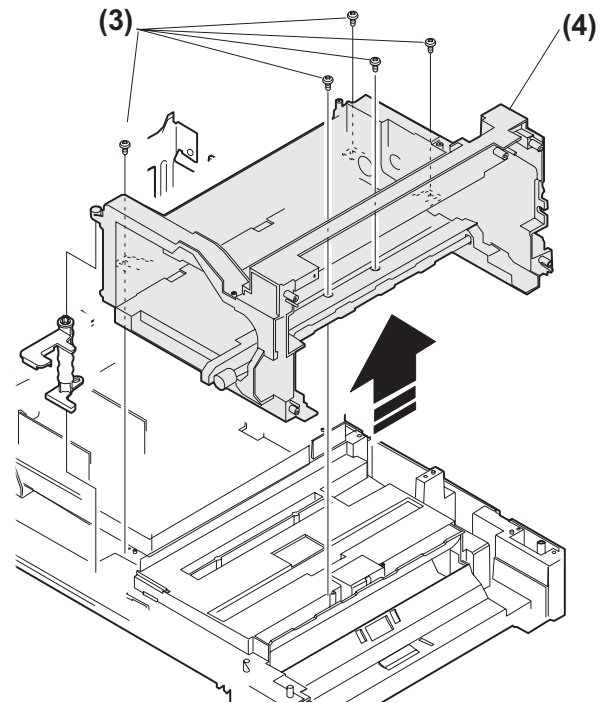
## 8. Tray paper feed section/Paper transport section

No.	Content
A	Interface frame unit
B	Drive unit
C	Solenoid (paper feed solenoid, resist roller solenoid)
D	Resist roller clutch , Resist roller
E	Paper feed clutch/Paper feed roller (Semi-circular roller)

### A. Intermittent frame unit

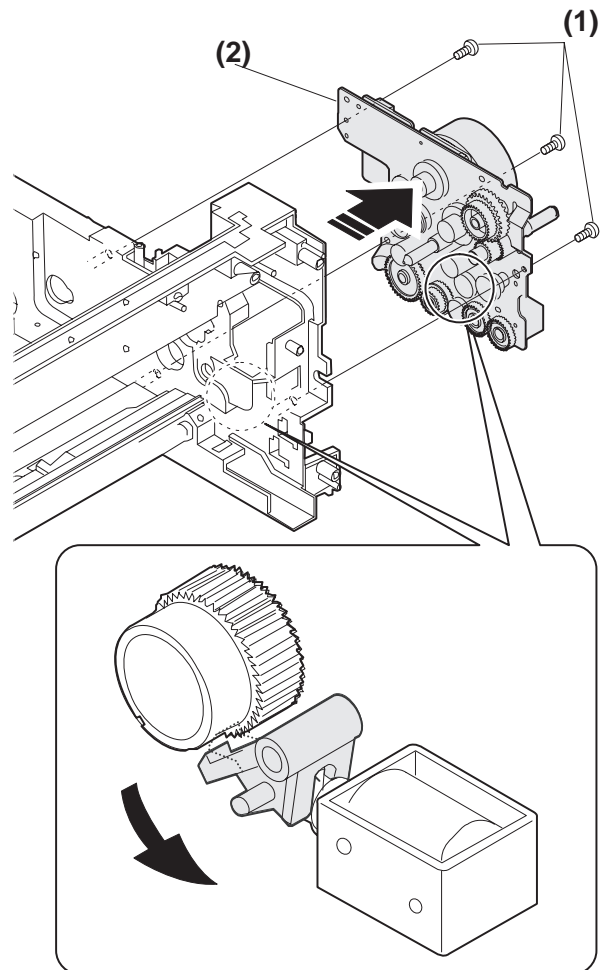


Assembly: Do not miss the door lock pawl.



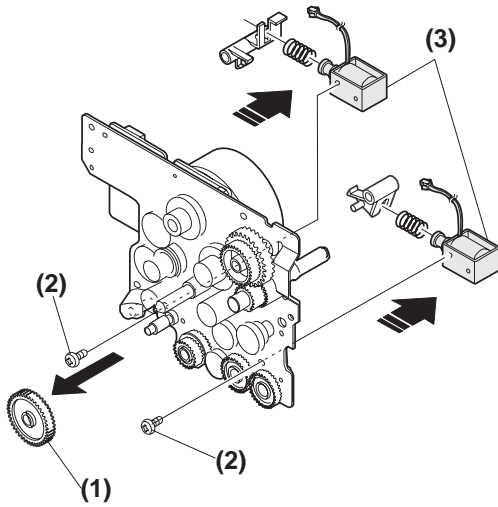
### B. Drive unit

Assembly: Move down the clutch pawl as shown below, and avoid the clutch and install.

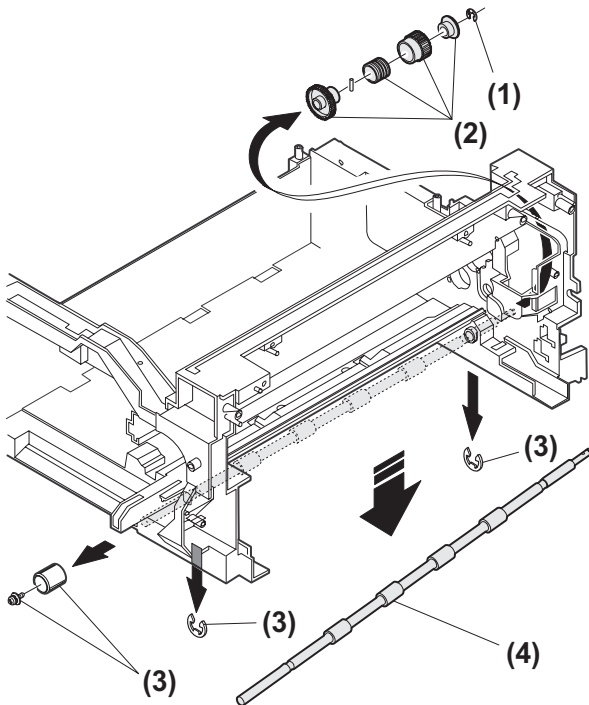




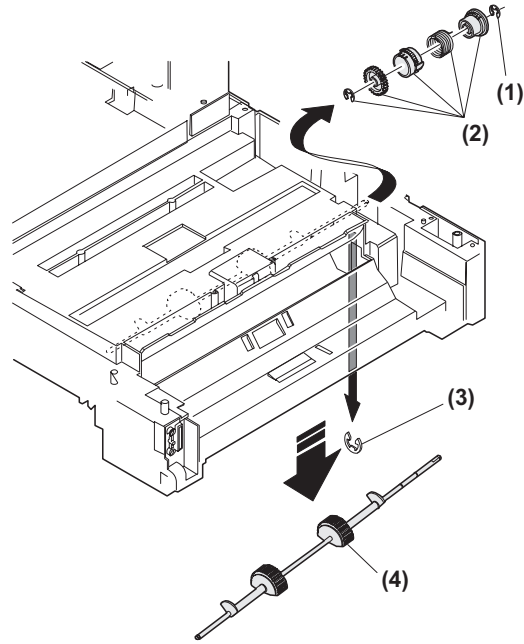
### C. Solenoid (paper feed solenoid, resist roller solenoid)



### D. Resist roller clutch/Resist roller



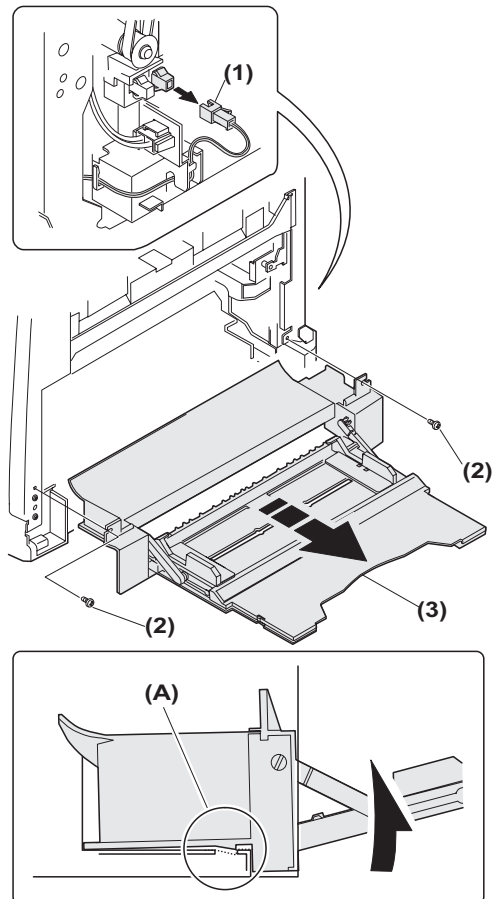
### E. Paper feed clutch/Paper feed roller (Semi-circular roller)



## 9. Manual multi paper feed section

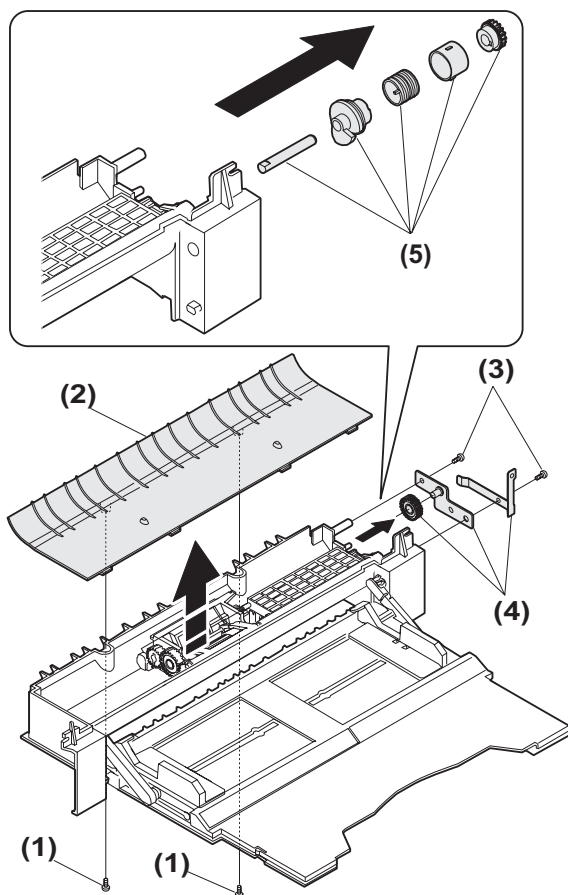
No.	Content
A	Manual multi paper feed section
B	Manual transport clutch
C	Manual paper feed clutch
D	Manual transport roller/Manual paper feed roller
E	Multi feed solenoid

### A. Manual multi paper feed



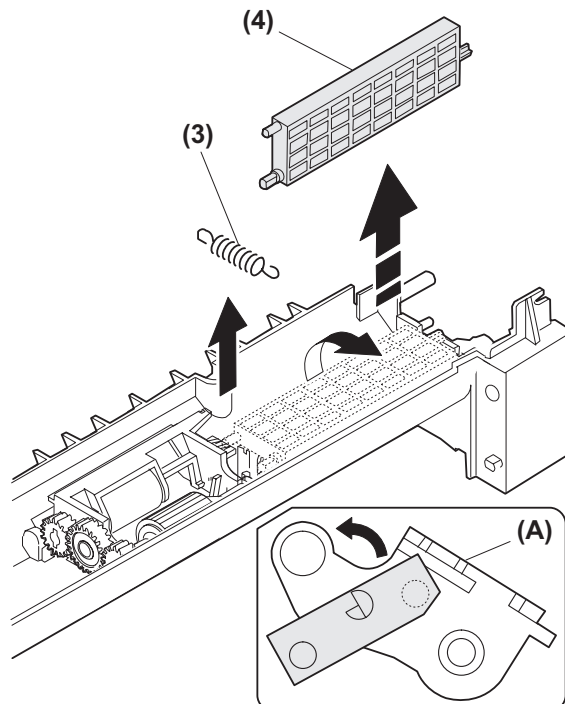


## B. Manual transport clutch



Disassembly: Set up the cam transmission arm (2), and remove it.

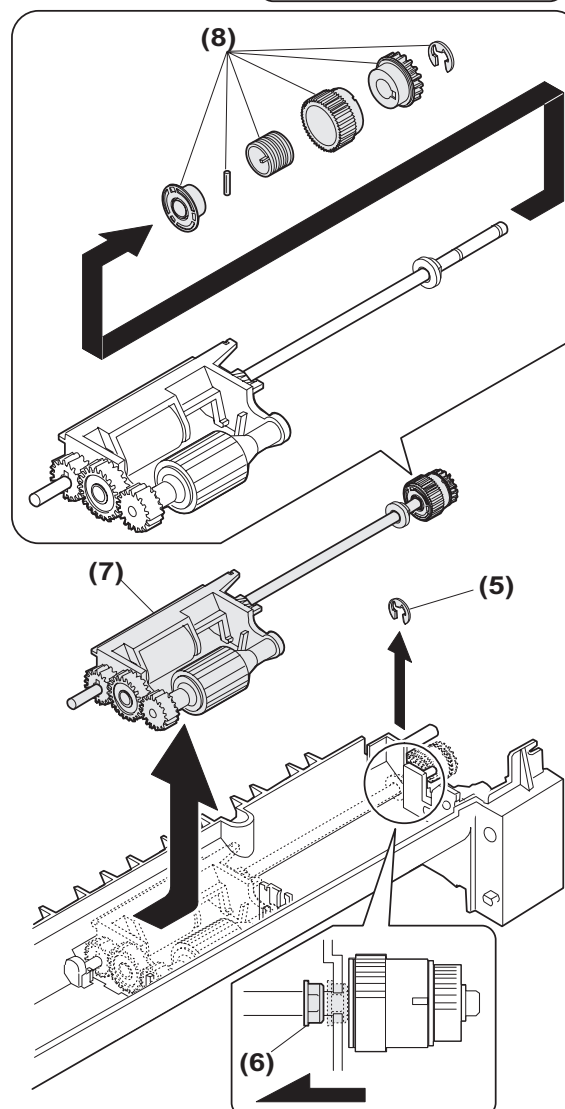
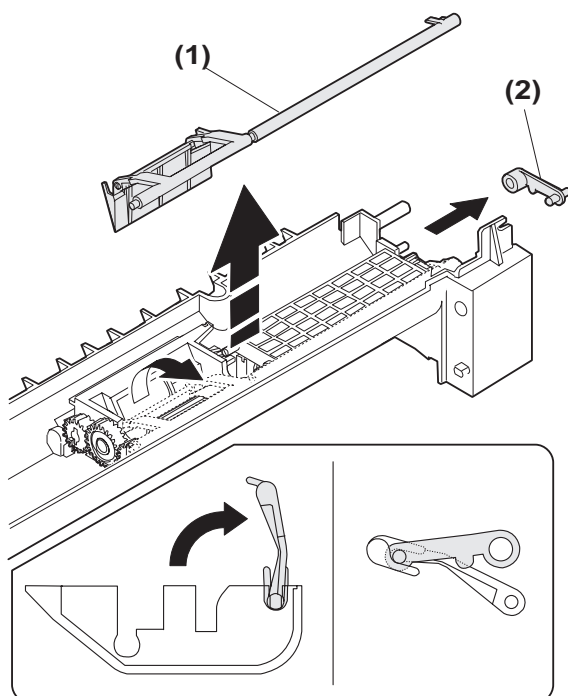
Assembly: Install so that the cam transmission arm (2) is under the roller arm (A).



## C. Manual paper feed clutch

Disassembly: Set up the shutter arm (1) then remove it.

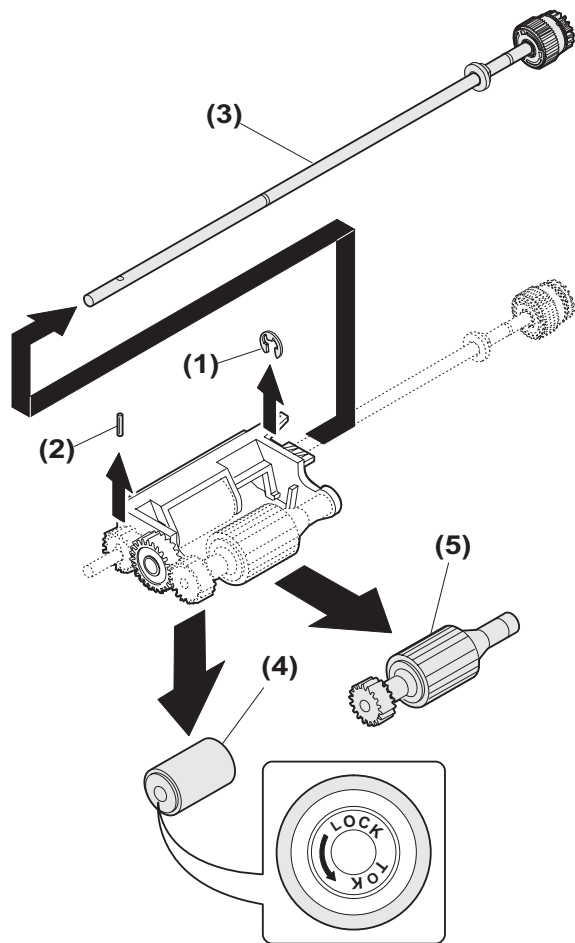
Assembly: Install so that the boss section of the fulcrum arm (2) comes between ribs.





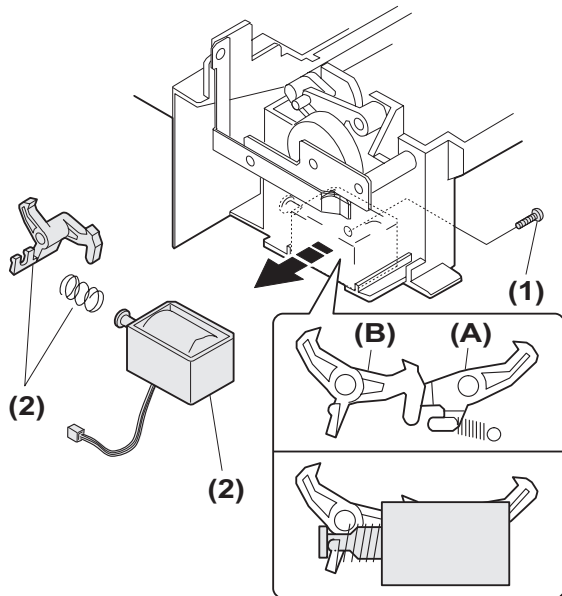
### D. Manual transport roller/Manual paper feed roller

Installation: Be careful of the installing direction of the manual transport roller (4).



### E. Multi feed solenoid

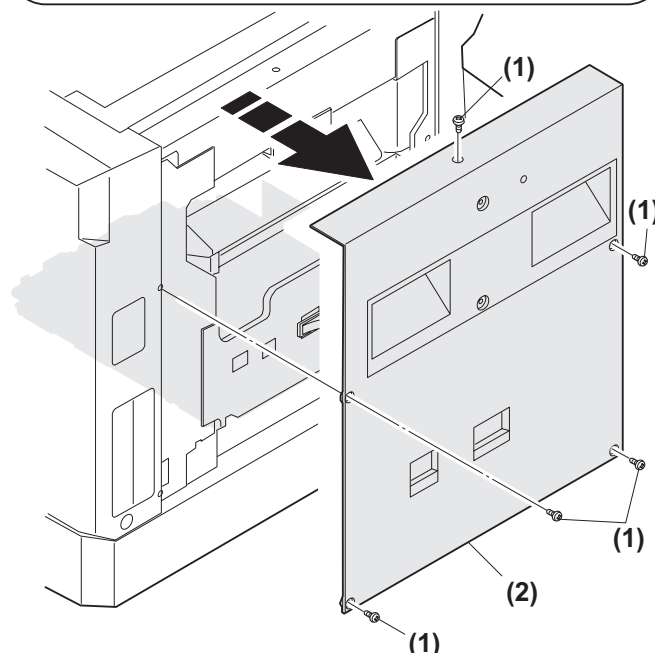
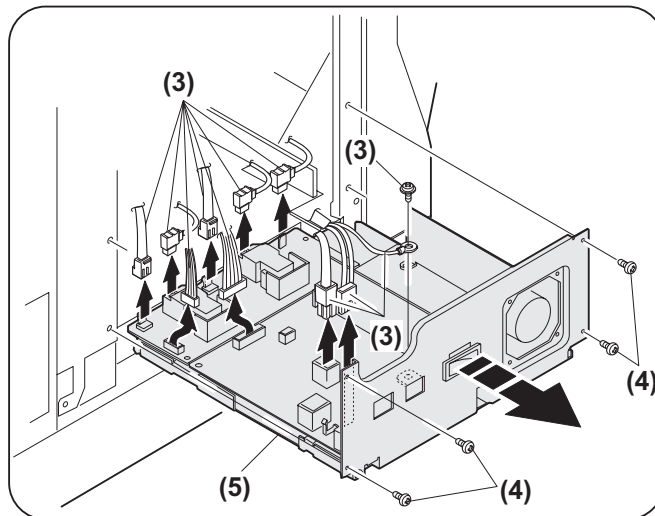
Assembly: Install so that the latches (A) and (B) move smoothly.



## 10. Power section

No.	Content
A	Power unit

### A. Power unit

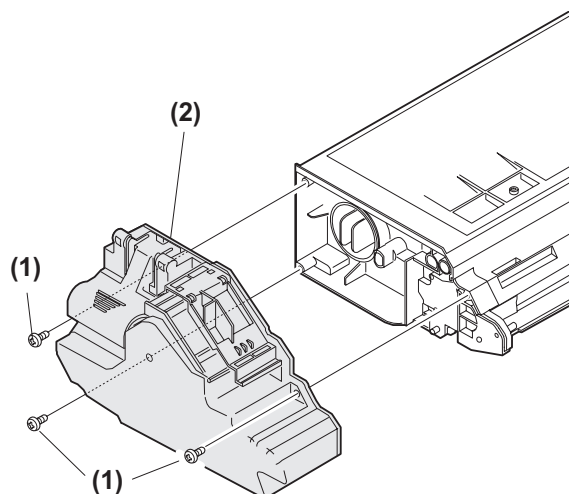




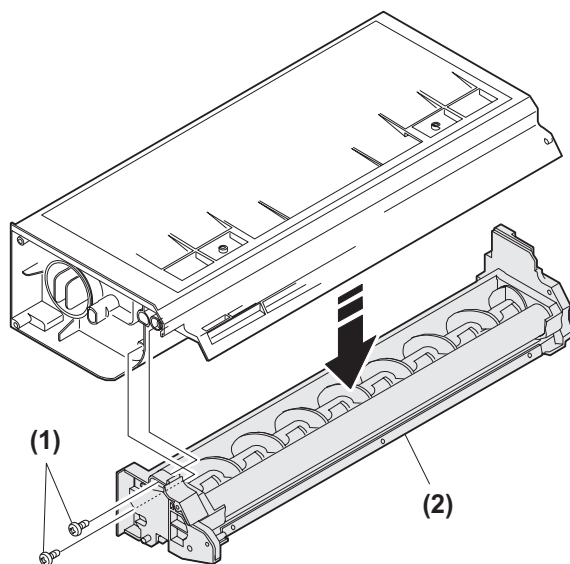
## 11. Developing section

No.	Contents
A	Waste toner box
B	Developing box
C	Developing doctor
D	MG roller

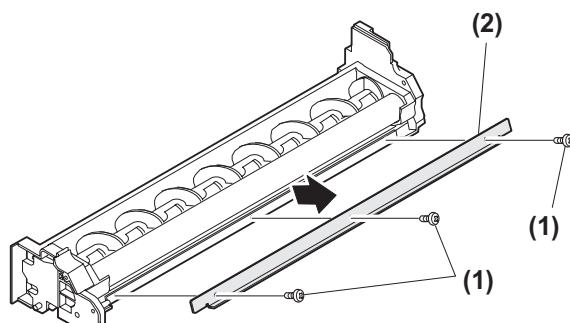
### A. Waste toner box



### B. Developing box

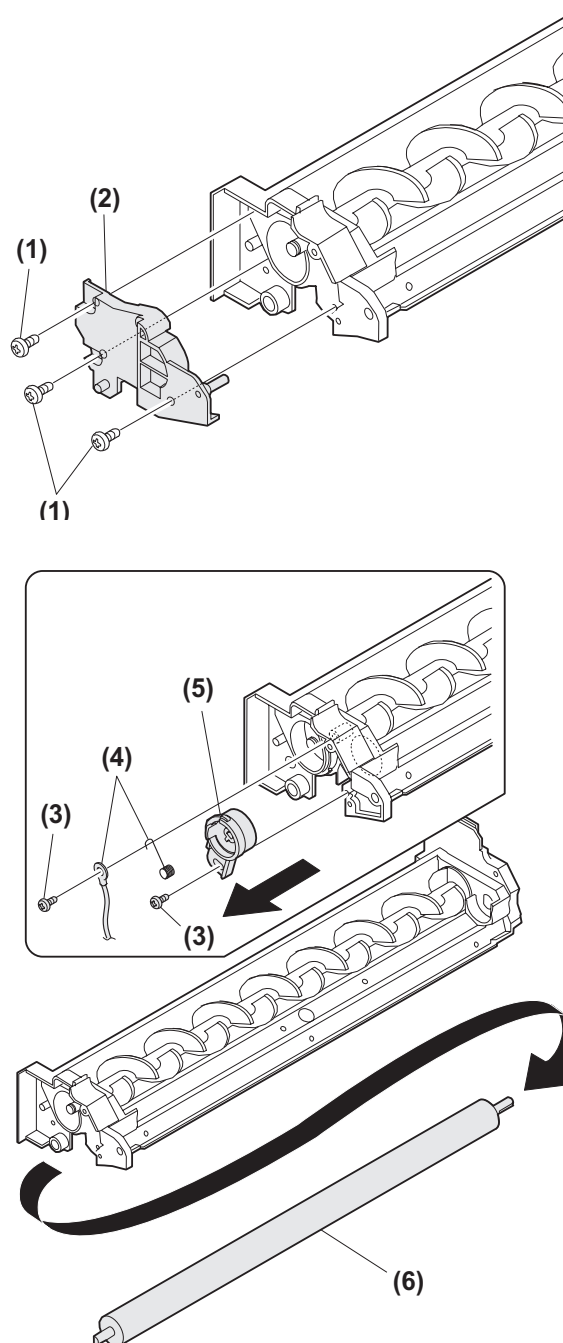


### C. Developing doctor



Adjustment: Developing doctor gap adjustment

### D. MG roller



Adjustment: MG roller main pole position adjustment

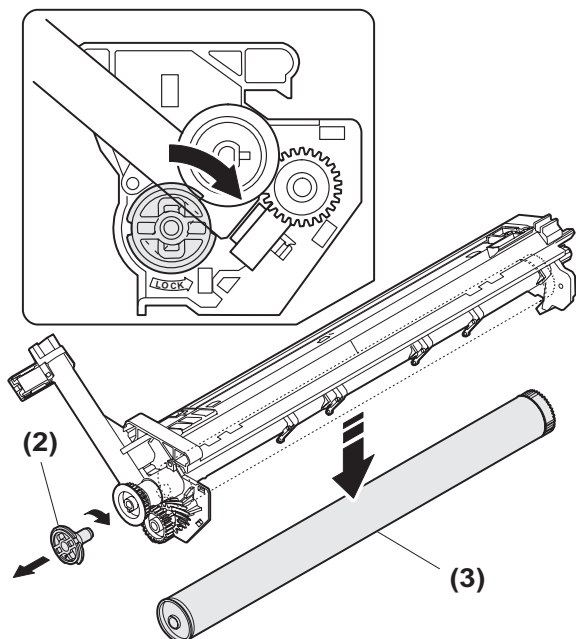
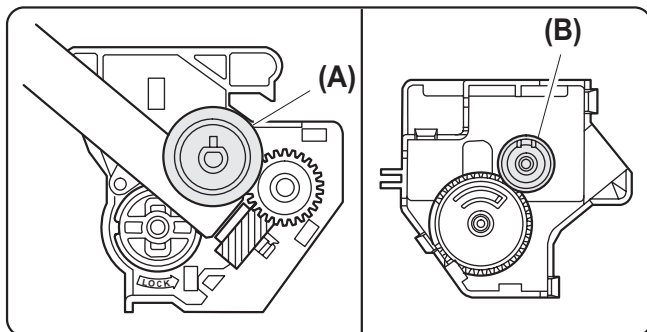
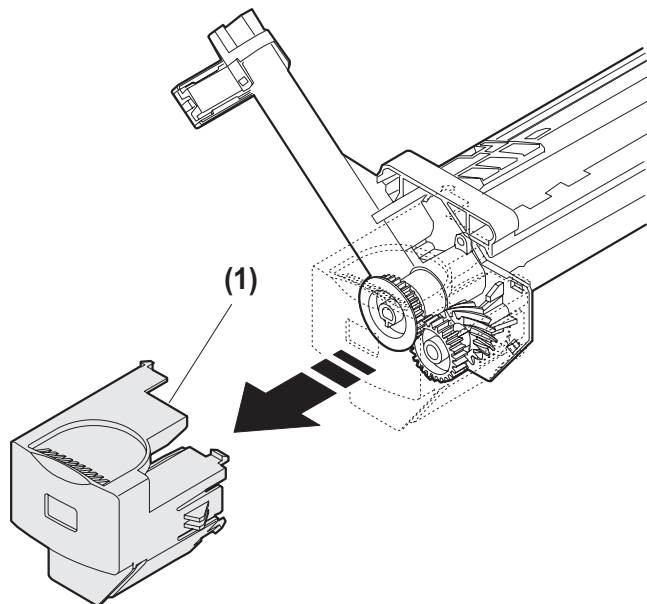


## 12. Process section

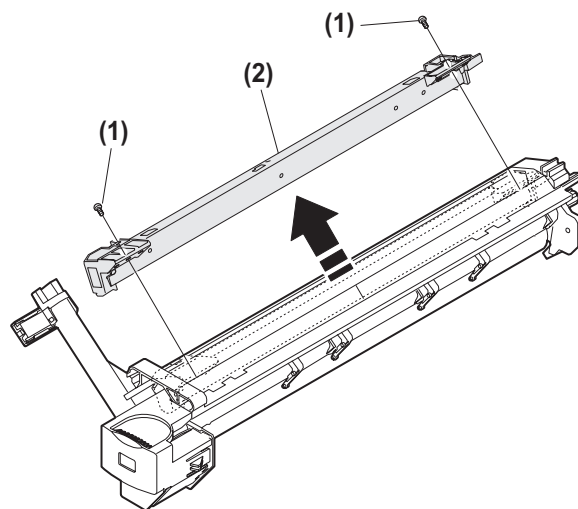
No.	Contents
A	Drum unit
B	MC holder unit
C	Cleaning blade

### A. Drum unit

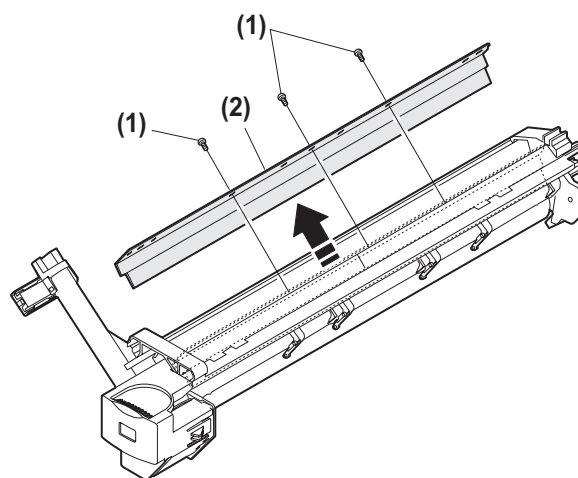
Assembly: When installing the drum cover (1), be sure to engage the transport screw gear (A) rib and the detection gear (B).



### B. MC holder unit



### C. Cleaning blade





AR-160/161 FM/E COVER 12/1/1998



AR-161

# SHARP

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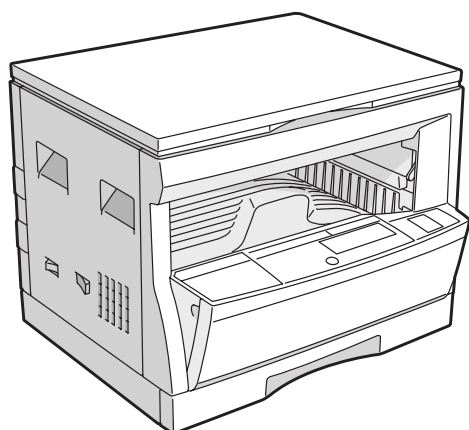
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**Printing & Reprographic Systems Group**  
**Quality & Reliability Control Center**  
**Yamatokoriyama, Nara 639-1186, Japan**

1998 December Printed in Japan ㊞



# SHARP PARTS GUIDE

CODE:00ZAR160//P1/



## DIGITAL COPIER

**AR-S160** (Japan only)

**AR-160** (Except Japan)

**MODEL AR-161** (Except Japan)

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**SHARP CORPORATION**

This document has been published to be used for after sales service only.  
The contents are subject to change without notice.



## DEFINITION

The definition of each Rank is as follows and also noted in the list

A : Parts necessary to be stocked as High usage parts.

B : Parts necessary to be stocked as Standard usage parts.

C : Low usage parts.

D : Parts necessary for refurbish.

E : Unit parts recommended to be stocked for efficient after sales service.

Please note that the lead time for the said parts may be longer than normal parts.

S : Consumable parts.

Please note that the following parts used in Copier under the same description are classified into A or B Rank depending upon the place used.

Example: Gear made of Metal, Sprocket, Bearing, Belt made of Rubber, Spring clutch mechanism.

A Rank : The parts which may be with the revolution or loading.

B Rank : Parts similar to A Rank parts, but are not included in Rank A.



Because parts marked with “△” is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specific to the product specification.

○

○ Other than this Parts Guide, please refer to documents Service Manual (including Circuit Diagram) of this model.

○ Please use the 13 digit code described in the right hand corner of front cover of the document, when you place an order.

○ For U.S. only-Use order codes provided in advertising literature. Do not order from parts department.

## 1 Exteriors

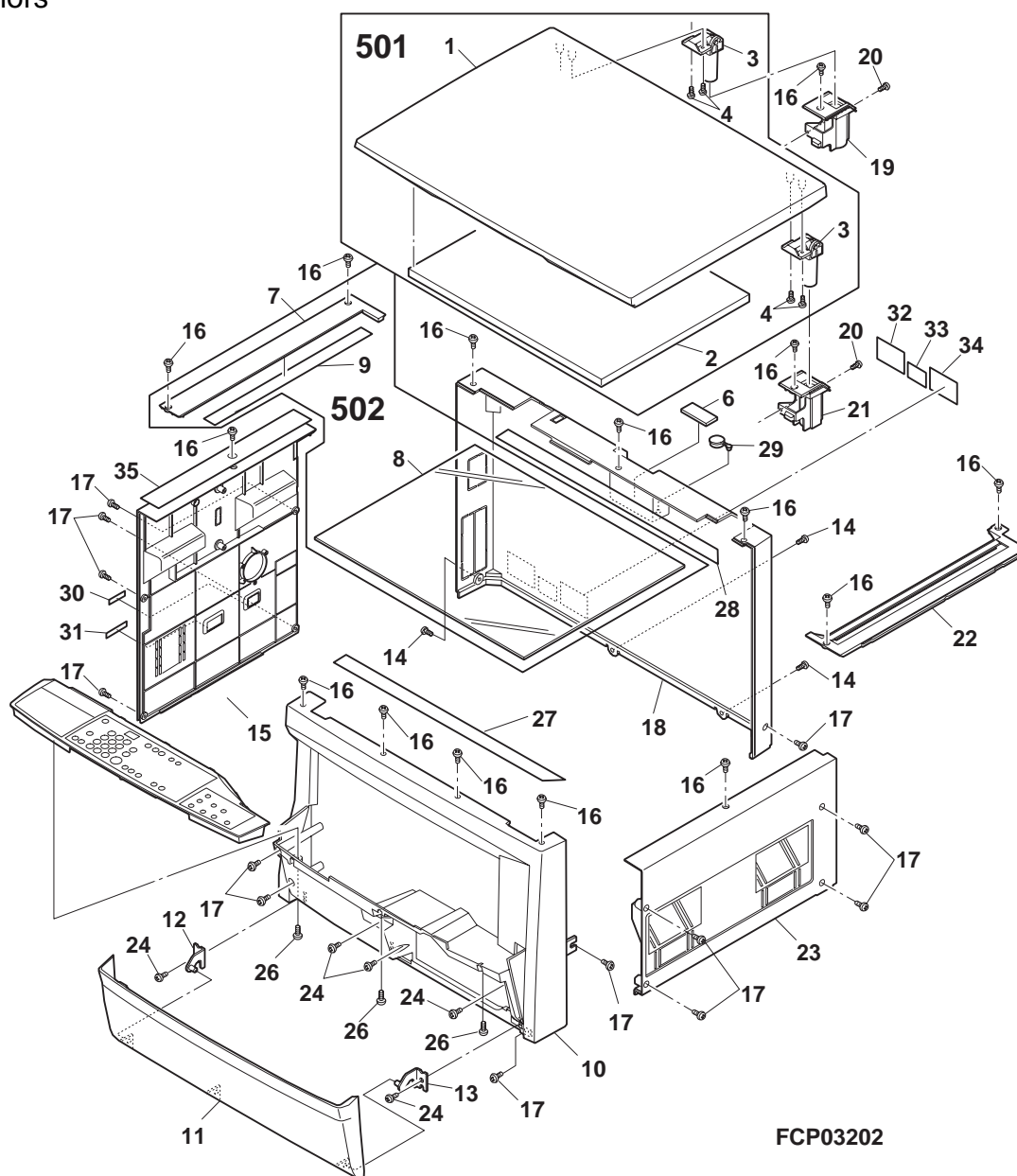
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	GC0VH0010QSZZ	BE	GN	N	D	OC cover
2	PSHEZ0058QSZZ	AY	FQ	N	C	OC sheet
3	CHNG-0007QS01	AM	EG	N	C	OC hinge
4	XEBSE40P10000	AA	DD		C	Screw (4×10)
6	GFTA-0002QSZZ	AD	DJ	N	D	SPF connector cover
7	CFIX-0008QS01	AR	EQ	N	C	Glass fixing plate (Japan only)
	CFIX-0008QS02	AQ	EQ	N	C	Glass fixing plate (Except Japan,Europe)
	CFIX-0008QS03	AR	EQ	N	C	Glass fixing plate (For Europe)
8	PGLSP0003QSZZ	BA	FX	N	B	Table glass
9	PSHEZ0059QSZZ	AF	DS	N	C	Sheet
10	CCAB-0012QS01	BE	GN	N	D	Front exterior (Japan only) (AR-S160)
	CCAB-0012QS02	BC	GJ	N	D	Front exterior (Except Japan,Europe) (AR-160)
	CCAB-0012QS03	BE	GN	N	D	Front exterior (For Europe) (AR-160)
	CCAB-0012QS05	BC	GJ	N	D	Front exterior (Except Japan,Europe) (AR-161)
	CCAB-0012QS06	BE	GN	N	D	Front exterior (For Europe) (AR-161)
11	GFTA-0001QSZZ	AW	FG	N	D	Front exterior cover (Except Europe)
	GFTA-0001QSZA	AX	FG	N	D	Front exterior cover (For Europe)
12	CARMP0010QS01	AD	DJ	N	C	Hinge arm L
13	CARMP0011QS01	AD	DJ	N	C	Hinge arm R
14	XEBSE40P10000	AA	DD		C	Screw (4×10)
15	GCAB-0014QSZZ	AY	FQ	N	D	Left exterior (Except Europe)
	GCAB-0014QSZA	BA	FX	N	D	Left exterior (For Europe)
16	XBBSE30P06000	AA	DD		C	Screw (3×6)
17	XHBSE30P08000	AA	DD		C	Screw (3×8)
18	GCAB-0013QSZZ	BC	GD	N	D	Rear exterior (Except Europe)
	GCAB-0013QSZA	BE	GN	N	D	Rear exterior (For Europe)
19	PGIDM0054QSZZ	AG	DX	N	C	Hinge guide L
20	XHBSD30P06000	AA	DD		C	Screw (3×6)
21	PGIDM0055QSZZ	AG	DX	N	C	Hinge guide R
22	GC0VH0011QSZZ	AP	EQ	N	D	OC glass fixing cover (Except Europe)

## 1 Exteriors



NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
22	GCOVH0011QSZA	AQ	EQ	N	D	OC glass fixing cover (For Europe)
23	GCAB-0015QSZZ	AV	FG	N	D	Right exterior (Except Europe)
	GCAB-0015QSZA	AX	FQ	N	D	Right exterior (For Europe)
24	XEBSE40P10000	AA	DD		C	Screw (4×10)
26	XEBSE30P08000	AA	DD		C	Screw (3×8)
27	PSHEZ0088QSZZ	AF	DS	N	C	Table glass sheet F
28	PSHEZ0089QSZZ	AF	DS	N	C	Table glass sheet R
29	PCAPH0011QSZZ	AC	DJ	N	C	SC cap
30	TLABH0103QSZZ	AE	DS	N	C	Warm heater label (Japan only)
31	TLABH0104QSZZ	AE	DS	N	C	Power supply label (Japan only)
32	TCAUA0770FCZZ	AB	DD		C	Service caution label (Except Japan)
33	TLABH0264GCZZ	AC	DJ		C	Service man label (For Europe)
34	TLABZ0058QSZZ	AD	DJ		C	Class 1 label (200V series)
35	TLABH0107QSZZ	AG	DX	N	C	Operation instruction label (Japan only)
	TLABH0108QSZZ	AG	DX	N	C	Operation instruction label (Except Japan)
501	CCOVH0010QS51	BM	HV	N	E	OC cover unit
502	CFIX-0008QS51	BF	GN	N	E	Table unit (Japan only)
	CFIX-0008QS52	BF	GN	N	E	Table unit (Except Japan, Europe)
	CFIX-0008QS53	BC	GJ	N	E	Table unit (For Europe)

## 1 Exteriors

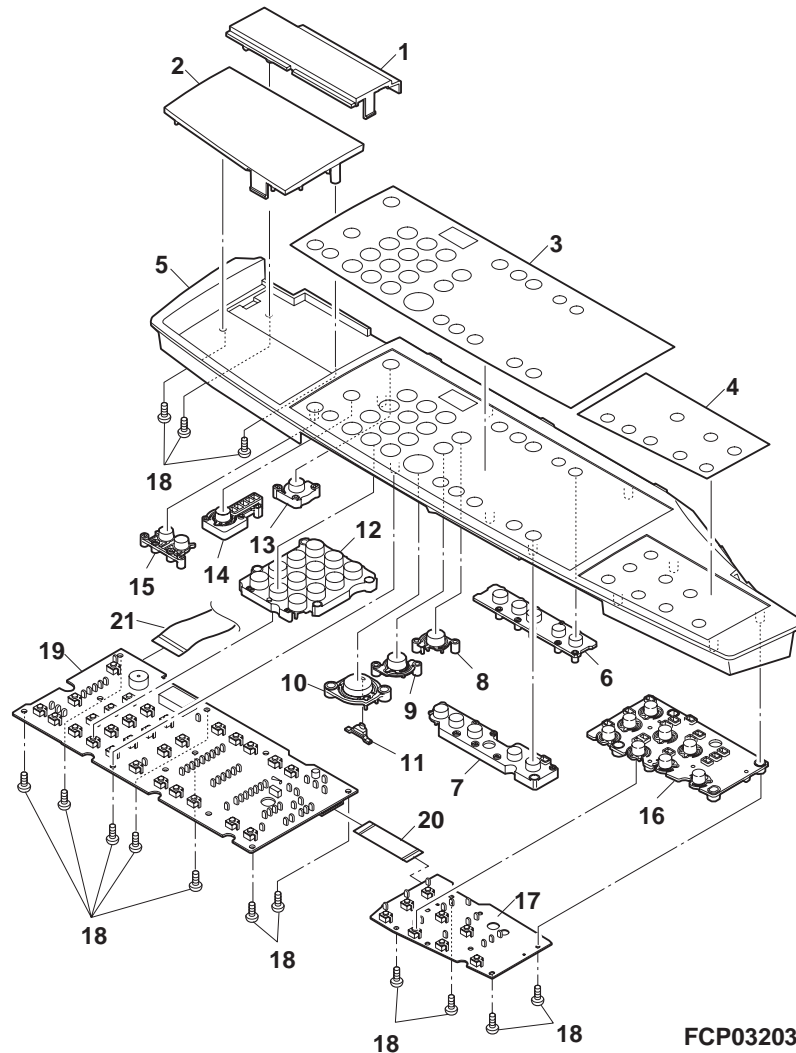




## 2 Operation panel section

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	GCÖVH0015QSZZ	AG	DX	N	D	LCD dummy cover
2	GCÖVH0016QSZZ	AH	DX	N	D	FAX dummy cover
3	HPNLH0004QSZZ	AV	FG	N	D	Main Dec. panel (Japan only)
	HPNLH0004QSZ1	AV	FG	N	D	Main Dec. panel (USA)
	HPNLH0004QSZ2	AV	FG	N	D	Main Dec. panel (CANADA)
	HPNLH0004QSZ3	AV	FG	N	D	Main Dec. panel (For Europe)
	HPNLH0004QSZ4	AV	FG	N	D	Main Dec. panel (U.Kingdom)
	HPNLH0004QSZ5	AV	FG	N	D	Main Dec. panel (Australia)
4	HPNLH0006QSZZ	AM	EG	N	D	Dec. panel (Japan only)
	HPNLH0006QSZ1	AM	EG	N	D	Dec. panel (USA,U.Kingdom)
	HPNLH0006QSZ2	AM	EG	N	D	Dec. panel (Other countries)
5	GCAB-0017QSZZ	AV	FG	N	D	Operation panel exterior (Except Europe)
	GCAB-0017QSZA	AW	FG	N	D	Operation panel exterior (For Europe)
6	JBTN-0018QSZZ	AE	DJ	N	C	Function key
7	JBTN-0029QSZZ	AE	DS	N	C	Select key
8	CBTN-0022QS01	AF	DS	N	C	CA key
9	CBTN-0021QS01	AF	DS	N	C	Clear key
10	CBTN-0019QS01	AG	DX	N	C	Copy key
11	JBTN-0020QSZZ	AC	DJ	N	C	Copy key (LIGHT IND)
12	CBTN-0016QS01	AN	EG	N	C	Ten key
13	JBTN-0026QSZZ	AE	DJ	N	C	Interrupt key
14	JBTN-0030QSZZ	AD	DJ	N	C	Mode select key
15	JBTN-0027QSZZ	AD	DJ	N	C	Density select key
16	JBTN-0023QSZZ	AG	DX	N	C	Special function key
17	CPWBF0025QS51	AZ	FQ	N	E	ERDH-operation PWB
18	XEBSD30P08000	AA	DD	N	C	Screw (3×8)
19	CPWBN0024QS51	BR	LP	N	E	COPY-operation PWB (Japan,Australia)
	CPWBN0024QS52	BQ	LP	N	E	COPY-operation PWB (Other countries)
20	DHA i-0116QSZZ	AC	DJ	N	C	Panel ERDH harness
21	DHA i-0115QSZZ	AF	DS	N	C	Operation panel harness

## 2 Operation panel section



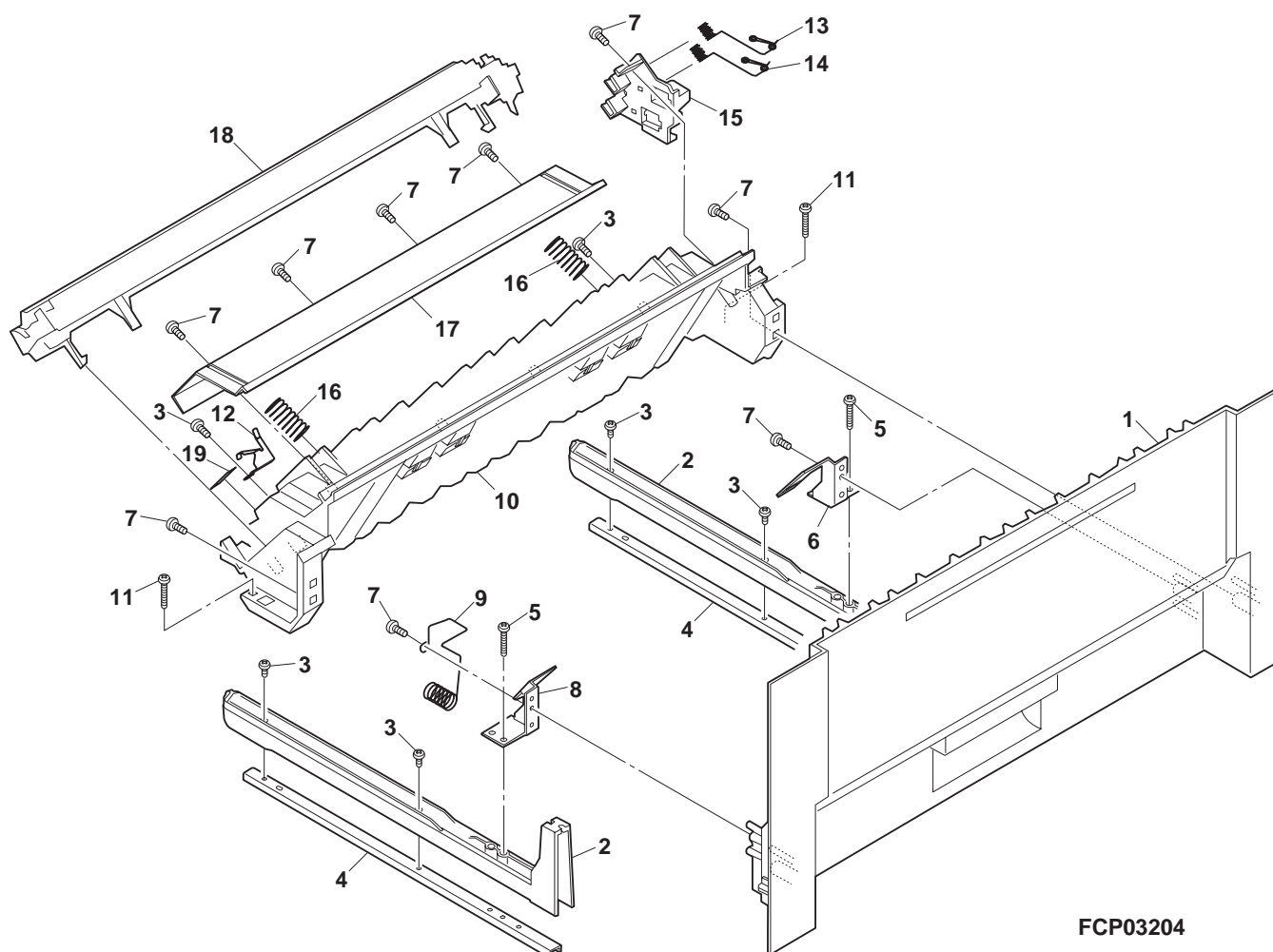
FCP03203



### 3 Side door unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	GDÖR-0001QSZZ	AW	FG	N	D	Right door (Except Europe)
	GDÖR-0001QSZA	AW	FG	N	D	Right door (For Europe)
2	LRALP0004QSZZ	AL	EB	N	C	Right door rail
3	XHBSD30P10000	AA	DD		C	Screw (3×10)
4	LPLTM0092QSZZ	AF	DS	N	C	Rail reinforce plate
5	XHBSD30P14000	AA	DD		C	Screw (3×14)
6	LPLTM0091QSZZ	AE	DS	N	C	Inner reinforce plate R
7	XEBSD30P10000	AA	DD		C	Screw (3×10)
8	LPLTM0090QSZZ	AE	DS	N	C	Inner reinforce plate F
9	MSPRC0085QSZZ	AE	DJ	N	C	TC case GND spring
10	LFRM-0016QSZZ	AT	EZ	N	C	Right door inner
11	XHBSD30P16000	AA	DD		C	Screw (3×16)
12	LPLTM0068QSZZ	AE	DJ	N	C	TC case terminal plate
13	MSPRC0084QSZZ	AD	DJ	N	C	BC interface electrode spring
14	MSPRC0083QSZZ	AD	DJ	N	C	TC interface electrode spring
15	LHLDZ0033QSZZ	AF	DS	N	C	TC terminal interphase holder
16	MSPRC0082QSZZ	AC	DJ	N	C	Pressure spring
17	PGiDH0041QSZZ	AL	EB	N	C	BC rear paper guide
18	CHLDZ0030QS51	BA	FX	N	E	TC unit
19	TCAUH0819FCZZ	AA	DD		C	HT caution label (Japan only)

### 3 Side door unit



FCP03204

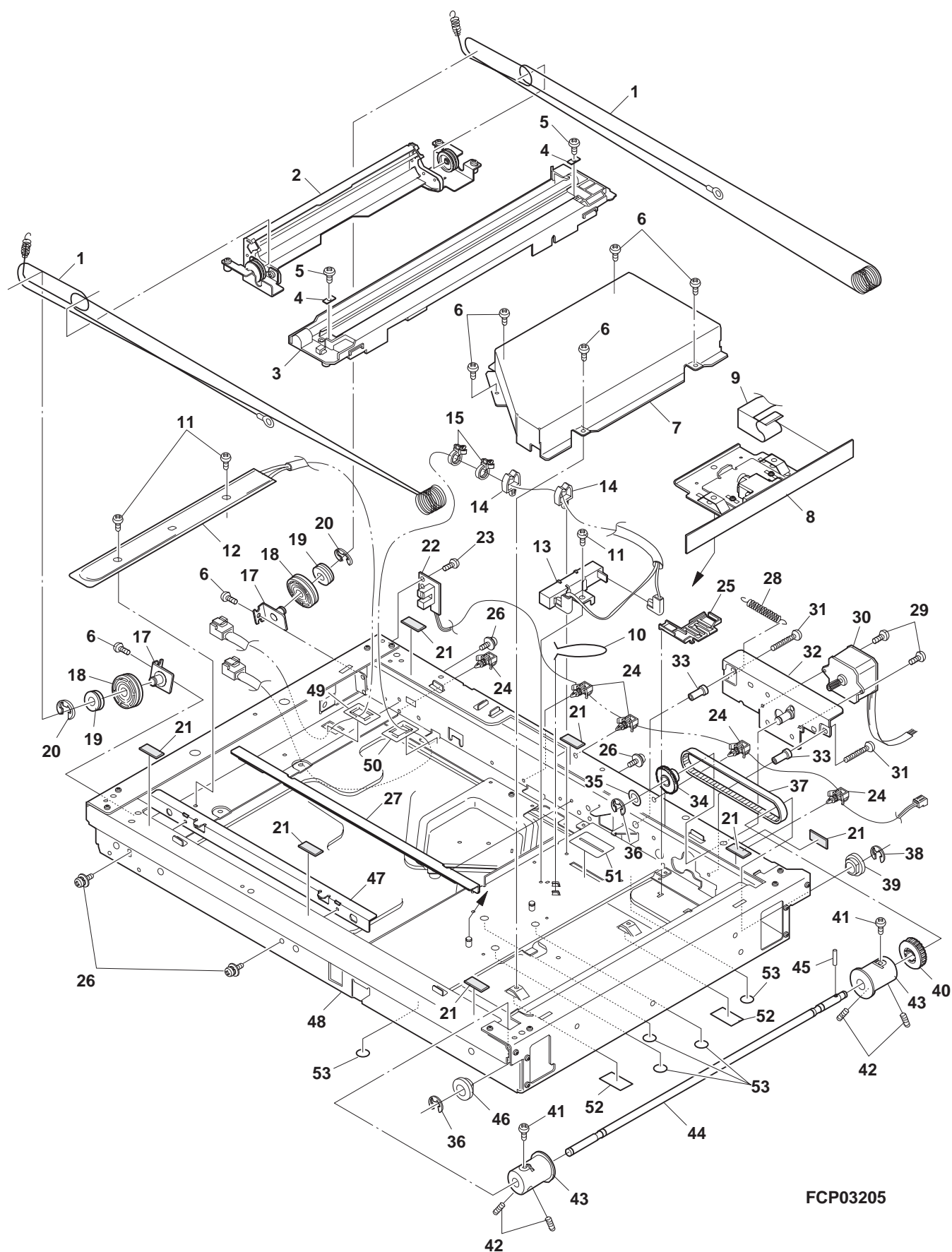


## 4





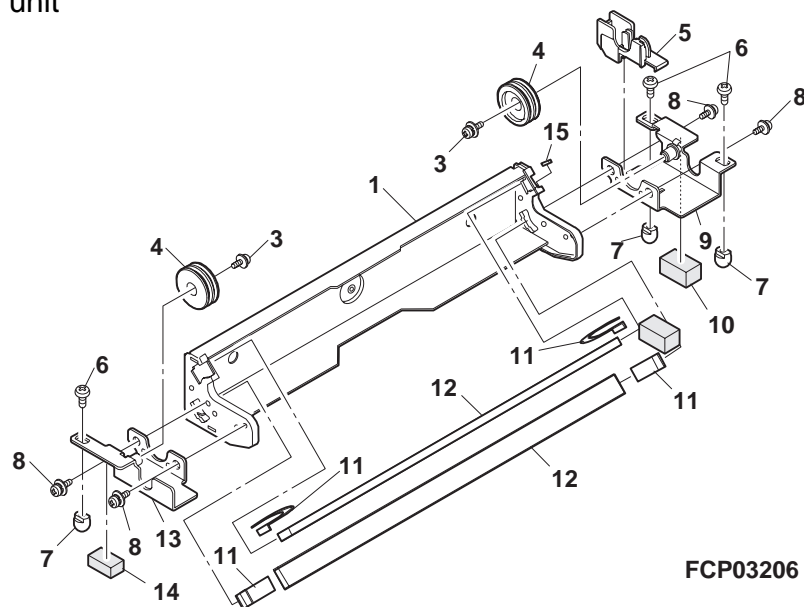
# 4 Optical unit



FCP03205



# 5 2nd,3rd mirror unit



FCP03206

# 5 2nd,3rd mirror unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	LHLDZ0044QSZZ	AP	EQ	N	C	2nd,3rd mirror holder
3	XBPSD40P06KS0	AA	DD		C	Screw (4×6KS)
4	NPLYZ0007QSZZ	AG	DX		C	W pulley
5	LHLDZ0013QSZZ	AD	DJ		C	CL guide holder
6	XEBSD40P06000	AA	DD		C	Screw (4×6)
7	CSLi-0103FC31	AF	DS		E	Slider unit (4pcs/set)
8	LX-BZ0335FCZZ	AA	DD		C	Screw (4×6)(Red)
9	CPLTM0029QS01	AH	DX		C	Pulley fixing plate R
10	PCUSS0009QSZZ	AA	DJ		C	MB-B cushion R
11	LFiX-0284FCZZ	AC	DD		C	2nd,3rd mirror fixing plate F
12	PMiR-0008QSZZ	AP	EQ	N	B	2nd,3rd mirror
13	CPLTM0028QS01	AH	DX		C	Pulley fixing plate F
14	PCUSS0201FCZZ	AA	DD		C	MB-B cushion
15	PSPAZ0011QSZZ	AD	DJ	N	C	Mirror spacer
	(Unit)					
901	CMiR-0008QS31	BB	GD	N	E	2nd,3rd mirror unit

# 6 Middle frame unit

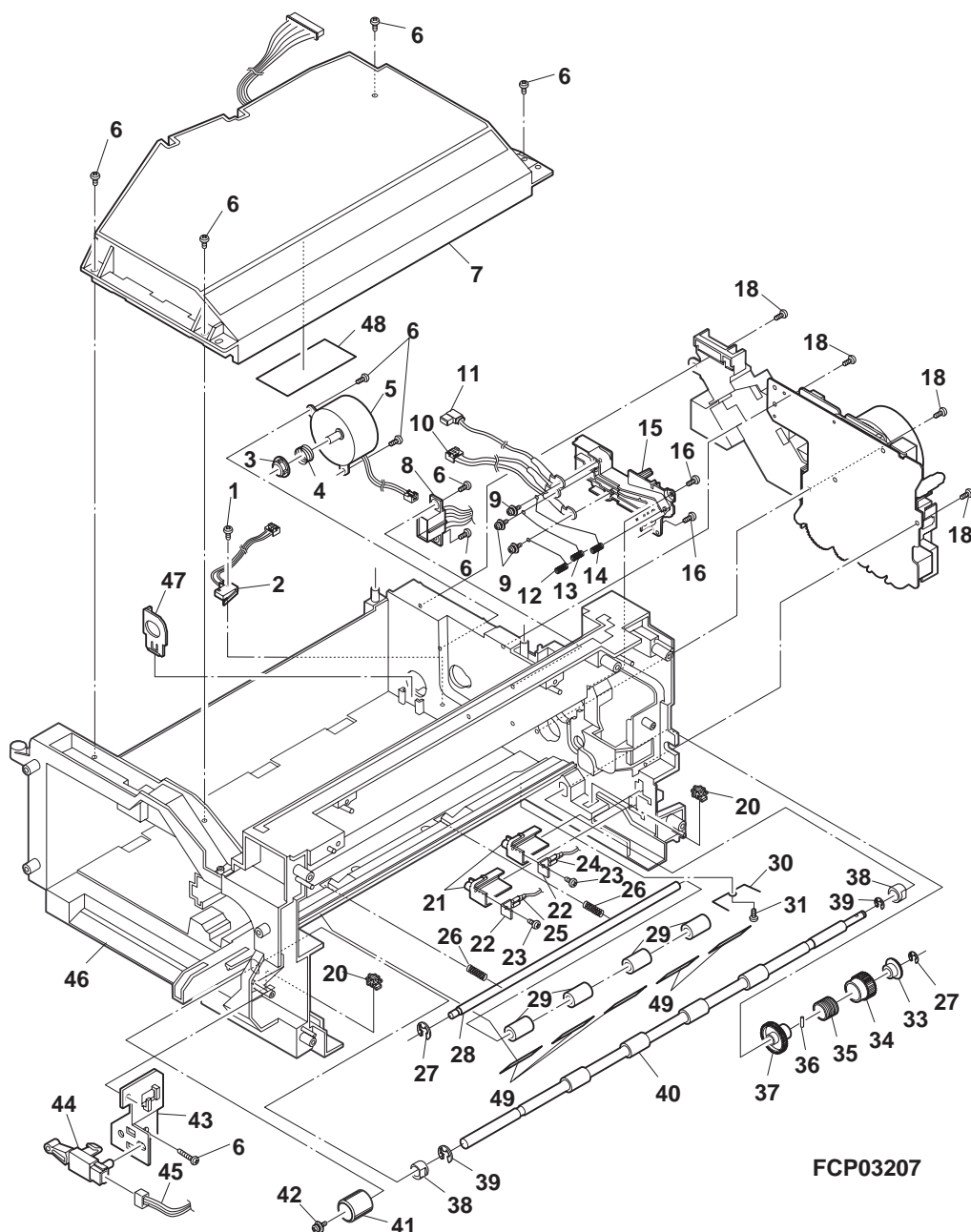
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	XEPSD23P12000	AA	DD		C	Screw (2.3×12)
2	CSW-M0007QS51	AQ	EQ	N	E	Inter lock switch unit
3	NCPL-0002QSZZ	AC	DJ		C	Hopper cupring
4	MSPRC0024QSZZ	AA	DJ		C	Hopper spring
5	RMOTD0016QSZZ	AY	FQ	N	B	Toner motor
6	XEBSD30P10000	AA	DD		C	Screw (3×10)
7	DUNTK0041QSZZ	AU	EZ	N	E	LSU unit (100V series)
	DUNTK0041QS11	CC	TZ	N	E	LSU unit (200V series)
8	DHAI-0112QSZZ	AP	EQ	N	C	DEV harness
9	XBPSD30P06ES0	AA	DD		C	Screw (3×6ES)
10	CHAI-0109QS51	AN	EG	N	E	GB-MCFB harness unit
11	CHAI-0107QS51	AK	DX	N	E	MC harness unit
12	MSPRD0104QSZZ	AC	DJ	N	C	HV terminal spring (case)
13	MSPRD0103QSZZ	AC	DJ	N	C	HV terminal spring (grid)
14	MSPRD0102QSZZ	AC	DJ	N	C	HV terminal spring
15	LHLDZ0038QSZZ	AH	DX	N	C	High voltage terminal holder
16	XEBSD30P08000	AA	DD		C	Screw (3×8)
18	XEBSD30P10000	AA	DD		C	Screw (3×10)
20	LSTPP0005QSZZ	AC	DJ	N	C	SD stopper
21	LHLDZ0039QSZZ	AE	DJ	N	C	High voltage terminal holder TC
22	LPLTM0067QSZZ	AC	DJ	N	C	TC terminal plate
23	XEBSD30P06000	AA	DD		C	Screw (3×6)
24	DHAI-0106QSZZ	AL	EB	N	C	BC harness
25	DHAI-0108QSZZ	AK	DX	N	C	TC harness
26	MSPRC0105QSZZ	AB	DJ	N	C	PS pressure spring
27	XRESP40-06000	AA	DD		C	E type ring
28	NSFTZ0021QSZZ	AK	EB	N	C	PS roller shaft
29	NKOM-0001QSZZ	AD	DJ	N	C	PS collar (φ12)
30	MSPRD0139QSZZ	AB	DJ	N	C	PS earth spring
31	XEBSD30P06000	AA	DD		C	Screw (3×6)



## 6 Middle frame unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
33	LBÖSZ1508FCZZ	AG	DX		C	Cam boss A2
34	PPiPP0174FCZZ	AC	DJ		C	Pipe C
35	MSPRC0106QSZZ	AF	DS	N	C	PS clutch spring
36	XPSSJ20-07000	AA	DD		C	Spring pin (φ2-7)
37	NGERH0062QSZZ	AK	DX	N	C	Clutch gear (32T)
38	NBRGC0047FCZZ	AD	DJ		C	Bearing E
39	XRESP60-08000	AA	DD		C	E type ring
40	NRÖLP0032QSZZ	AT	EZ	N	C	PS trnsport roller
41	JKNBZ0003QSZZ	AD	DJ	N	C	PS knob
42	XBPSD30P10KS0	AB	DD		C	Screw (3×10KS)
43	LPLTM0070QSZZ	AD	DJ	N	C	Process detect SW fixing plate
44	QSW-B0003QSZZ	AF	DS		B	Tray detect switch
45	DHAi-0090QSZZ	AF	DS	N	C	Drum initial SW harness
46	LFRM-0024QSZZ	BC	GD	N	C	Middle frame
47	LPiNS0301FCZZ	AD	DJ		C	DV guide pin
48	TCAUH0007QSZZ	AD	DJ		C	Laser caution label (200V series)
49	PSHEZ0056QSZZ	AC	DJ	N	C	PS rear guide sheet

## 6 Middle frame unit

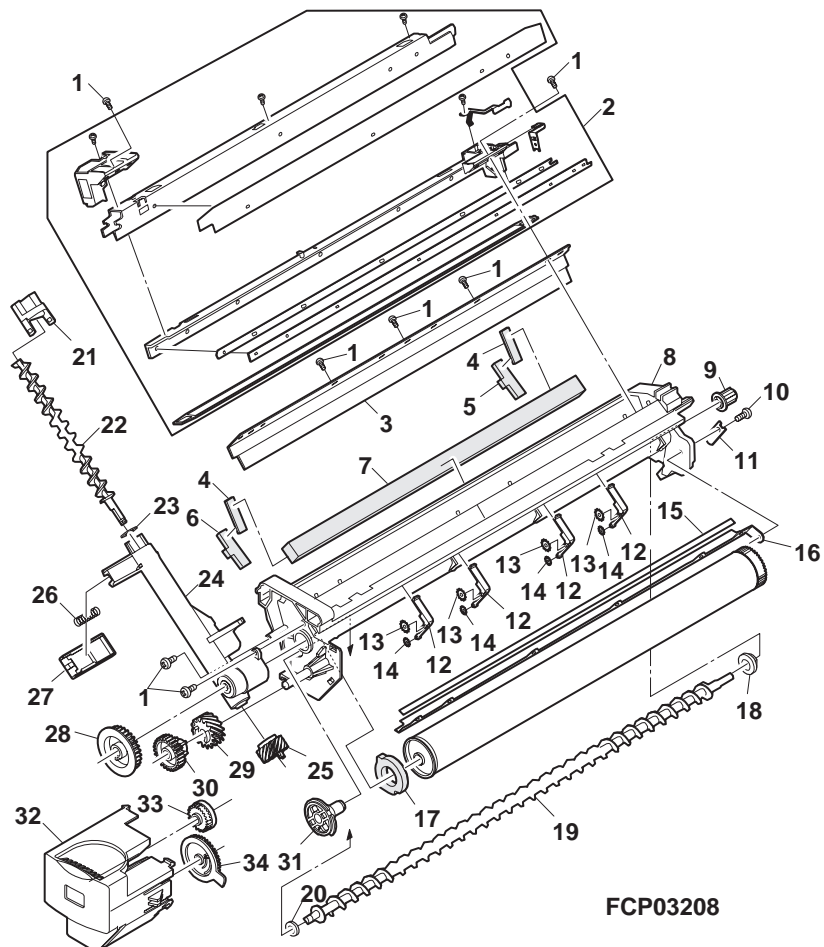




# 7 Process unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	XEBSD30P10000	AA	DD		C	Screw (3×10)
2	CHLDZ0035QS51	BH	GX	N	E	MC holder unit
3	UCLEZ0009QSZZ	AV	FG	N	C	Cleaning blade
4	PMLT-0015QSZZ	AA	DJ		C	Toner shield cushion
5	PSEL-0022QSZ1	AF	DS		C	Seal R
6	PSEL-0021QSZ1	AF	DS		C	Seal F
7	PMLT-0023QSZZ	AE	DJ	N	C	CL blade cushion
8	CFRM-0021QS01	AQ	EQ	N	C	Process frame
9	NCPL-0003QSZZ	AC	DJ		C	Screw cupring
10	XBBSD30P06000	AA	DD		C	Screw (3×6)
11	LPLTM0101QSZZ	AC	DJ	N	C	Sub blade earth plate
12	LHLDZ0045QSZZ	AD	DJ	N	C	Starling holder
13	LX-WZ0329FCZZ	AB	DD		C	Washer
14	LX-RZ0001QSZZ	AB	DD	N	C	Starling (φ5)
15	PTPE-0006QSZZ	AC	DJ	N	C	Sub blade tape
16	UCLEZ0010QSZZ	AR	EQ	N	C	Sub blade
17	PMLT-0017QSZZ	AC	DJ		C	Flange cushion
18	NBRGP0299FCZZ	AC	DJ		C	CL bearing (M5)
19	NSFTZ0020QSZZ	AL	EB	N	C	Transport screw
20	PMLT-0018QSZ1	AC	DJ		C	Transport screw cushion
21	PCAPH0009QSZZ	AC	DJ	N	C	Toner pipe cap
22	NSFTZ0019QSZZ	AE	DJ	N	C	Transport pipe screw
23	PSPAZ0696FCZZ	AC	DJ		C	P cap spacer
24	PPiPP0005QSZZ	AM	EG	N	C	Toner pipe
25	NGERH0039QSZZ	AE	DS		C	Transport pipe gear (14T)
26	MSPRC0045QSZZ	AA	DJ		C	Toner pipe spring
27	PSHT-0004QSZZ	AC	DJ		C	Toner pipe shutter
28	NGERH0036QSZZ	AC	DJ		C	Transport screw gear (30T)
29	NGERH0038QSZZ	AC	DJ		C	Transport pipe gear (15T)
30	NGERH0037QSZZ	AC	DJ		C	Idle gear (26T)
31	LFiX-0007QSZ1	AE	DJ	N	C	Drum fixing plate B (USA,CANADA)
	LFiX-0007QSZZ	AE	DJ	N	C	Drum fixing plate A (Other countries)
32	PCÖVP0018QSZZ	AG	DS		C	Drum cover
33	NGERH0035QSZ1	AC	DJ	N	C	Detector gear (25T)
34	NGERH0034QSZ1	AC	DJ	N	C	Detector gear (50T)

# 7 Process unit



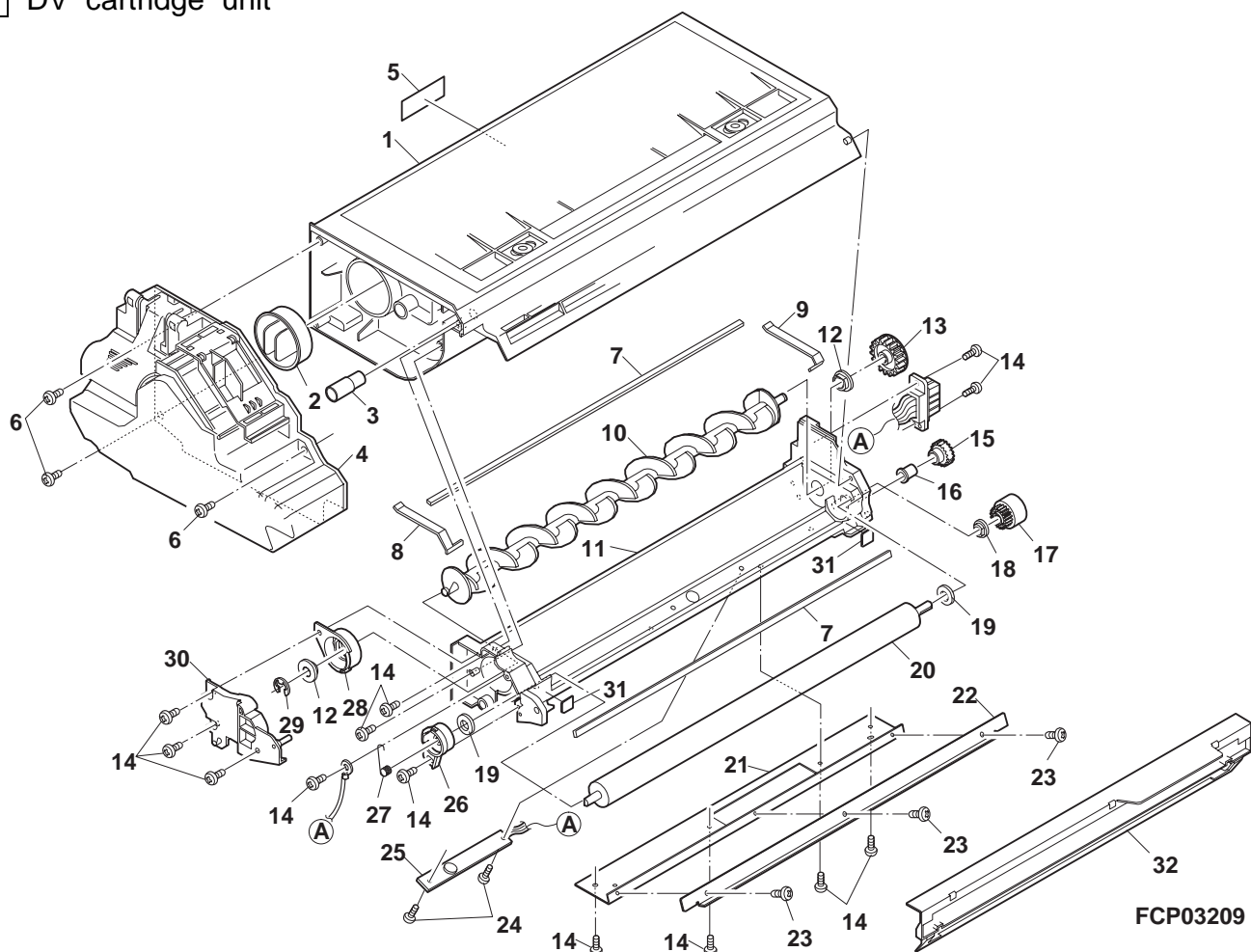
FCP03208



# 8 DV cartridge unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	CBØX-0002YS54	BF	GN	N	E	Toner box unit A (USA,CANADA)
	CBØX-0002YS52	BE	GN	N	E	Toner box unit B (Other countries)
2	PCAPH0005YSZZ	AD	DJ	N	C	Toner cap
3	PCAPH0004YSZZ	AC	DJ	N	C	Cap D
4	CBØX-0003YS52	AZ	FQ	N	E	Waste toner box unit
5	TLABZ1721FCZZ	AA	DD		C	DV CA label
6	XEBSD30P10000	AA	DD		C	Screw (3×10)
7	PMLT-0002YSZZ	AC	DJ	N	C	DV-TH cushion
8	PMLT-0005YSZZ	AB	DJ	N	C	DV side cushion F
9	PMLT-0006YSZZ	AB	DJ	N	C	DV side cushion R
10	NRØLM0001YSZZ	AP	EQ	N	C	MX roller
11	PBØX-0001YSZZ	AN	EQ	N	D	DV box
12	NBRGC0008YSZZ	AH	DX	N	C	DV bearing
13	NGERH0002YSZZ	AD	DJ	N	C	DV gear (28T)
14	XEBSF30P08000	AA	DD		C	Screw (3×8)
15	NGERH0001YSZZ	AD	DJ	N	C	DV idle gear (20T)
16	PCAPH0001YSZZ	AD	DJ	N	C	DV idle cap
17	NGERH0028QSZZ	AD	DJ		C	DV gear (18T)
18	NBRGC0387FCZ1	AC	DJ		C	Bearing
19	PMLT-0686FCZZ	AA	DD		C	MG cushion
20	NRØLM0002YSZZ	BA	FX	N	C	MG roller
21	LPLTM0002YSZZ	AS	EQ	N	C	Doctor reinforce plate
22	LPLTM0001YSZZ	AN	EG	N	C	Doctor
23	XBPBZ30P04000	AA	DD		C	Screw (3×4)
24	XUBUZ30P06000	AA	DD		C	Screw (3×6)
25	RDTCM0001YSZZ	AZ	FQ	N	B	ATC sensor
26	LHLDZ0002YSZZ	AC	DJ	N	C	MG holder
27	MSPRK0001YSZZ	AB	DJ	N	C	Bias spring
28	LHLDZ0001YSZZ	AD	DJ	N	C	Bearing holder
29	XRESP50-06000	AA	DD		C	E type ring
30	PCØVP0001YSZZ	AE	DJ	N	C	DV-F side cover
31	PSHEA0004YSZZ	AC	DJ	N	C	DV side sheet
32	CCØVP0003YS52	AS	EQ	N	E	MG cover unit

# 8 DV cartridge unit



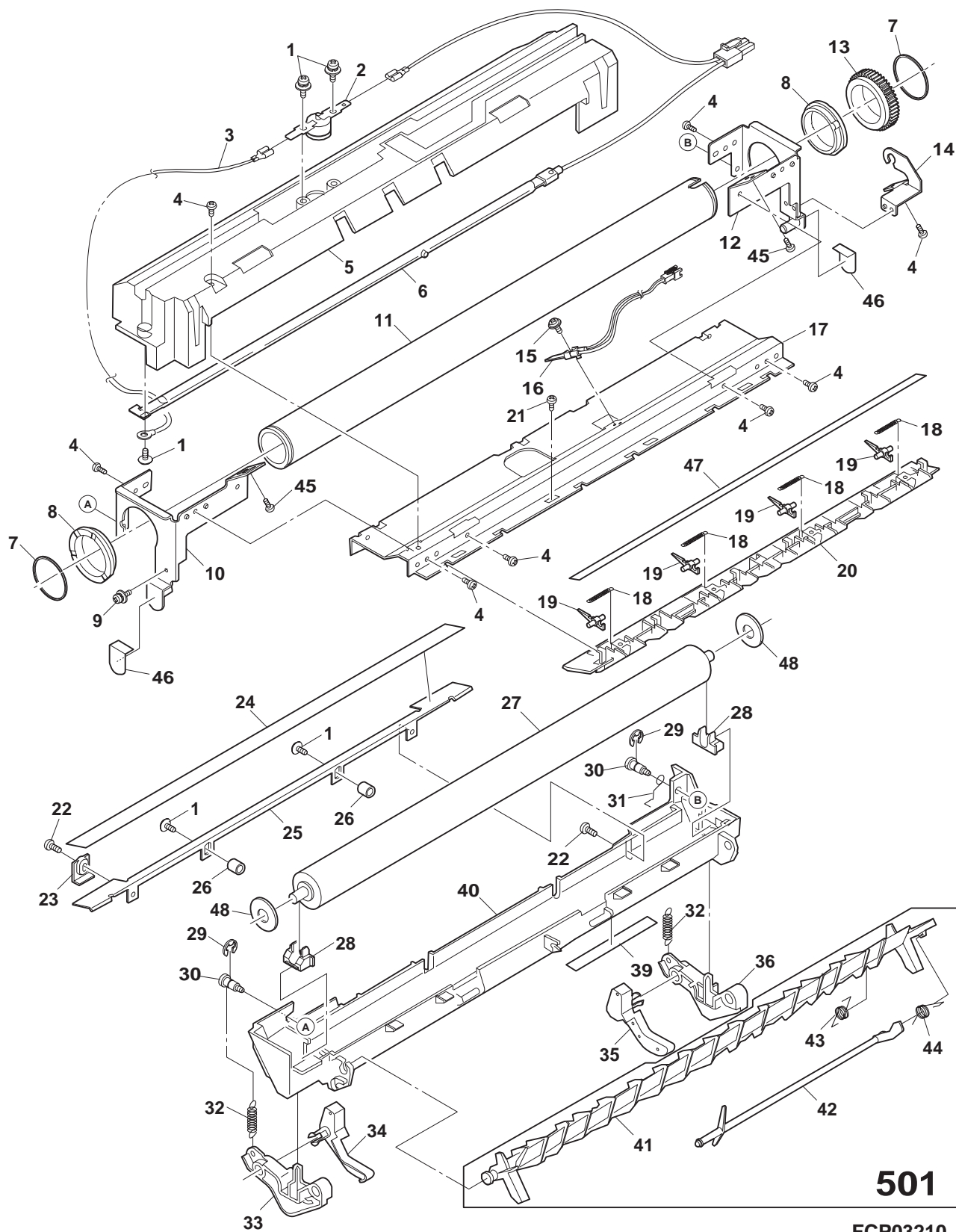


## 9





# 9 Fusing unit



FCP03210



## 10 Main drive unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	PG i DM0030QSZZ	AL	EB	N	C	Harness guide
2	XHBSD30P08000	AA	DD		C	Screw (3×8)
3	DHA i -0110QSZZ	AP	EQ	N	C	HL harness
4	DHA i -0089QSZZ	AH	DX	N	C	Thermister harness
5	DHA i -0114QSZZ	AC	DJ	N	C	Main motor harness
6	XBBS40P10000	AA	DD		C	Screw (4×10)
7	RMOTP0014QSZZ	BH	GX	N	B	Main motor
8	PTME-0003QSZZ	AD	DJ	N	C	Roller pawl
9	MSPRC1318FCZ1	AA	DJ		C	Spring B
10	RPLU-0009QSZZ	AN	EG	N	B	Solenoid CSA
11	LPLTM0048QSZZ	AF	DS	N	C	Drive earth plate
12	XRESP40-06000	AA	DD		C	E type ring
13	LX-WZ0002QSZZ	AB	DD	N	C	PO belt washer
14	NGERH0053QSZZ	AD	DJ	N	C	Gear (25/18T)
15	PTME-0012QSZZ	AC	DJ	N	C	PS clutch pawl
16	RPLU-0008QSZZ	AN	EG	N	B	Solenoid PS
17	XBBS40P04000	AA	DD		C	Screw (3×4)
18	CPLTM0047QS01	BA	FX	N	C	Main drive unit
19	NGERH0010QSZZ	AD	DJ		C	Gear (28T)
20	NGERH0009QSZZ	AD	DJ		C	Gear (46/16T)
21	NGERH0014QSZZ	AD	DJ		C	Gear (30/15T)
22	NGERH0011QSZZ	AD	DJ		C	MG gear
23	MSPRC2132FCZ1	AA	DJ		C	MG roller spring
24	NCPL-0004FCZZ	AB	DD		C	Cupring B
25	NGERH0052QSZZ	AE	DJ	N	C	Gear (38/18T)
26	NGERH0007QSZZ	AH	DX		C	Gear (68/26T)
27	NGERH0057QSZZ	AE	DJ	N	C	Gear (41T)
28	NGERH0008QSZZ	AL	EB		C	Gear (55/19T)
29	NGERH0059QSZZ	AD	DJ	N	C	Gear (23/27T)
30	NGERH0012QSZZ	AE	DS		C	Gear (20T)
31	NGERH0058QSZZ	AF	DS	N	C	Gear (21/17T)
32	NGERH0013QSZZ	AG	DX		C	Gear (31/17T)
33	NGERH0016QSZZ	AD	DJ		C	Cupring gear (34T)
34	MSPRC0081QSZZ	AB	DJ	N	C	HT ratchet spring
35	NGERH0055QSZZ	AE	DJ	N	C	Ratchet gear (44T)
36	NGERH0056QSZZ	AE	DJ	N	C	Ratchet gear (33T)
37	LX-WZ0314FCZZ	AA	DD		C	Washer
38	NGERH0054QSZZ	AD	DJ	N	C	Gear (33/20T)
501	CGERH0011QS51	AE	DS		E	MG gear unit

## 11 Base plate unit 1

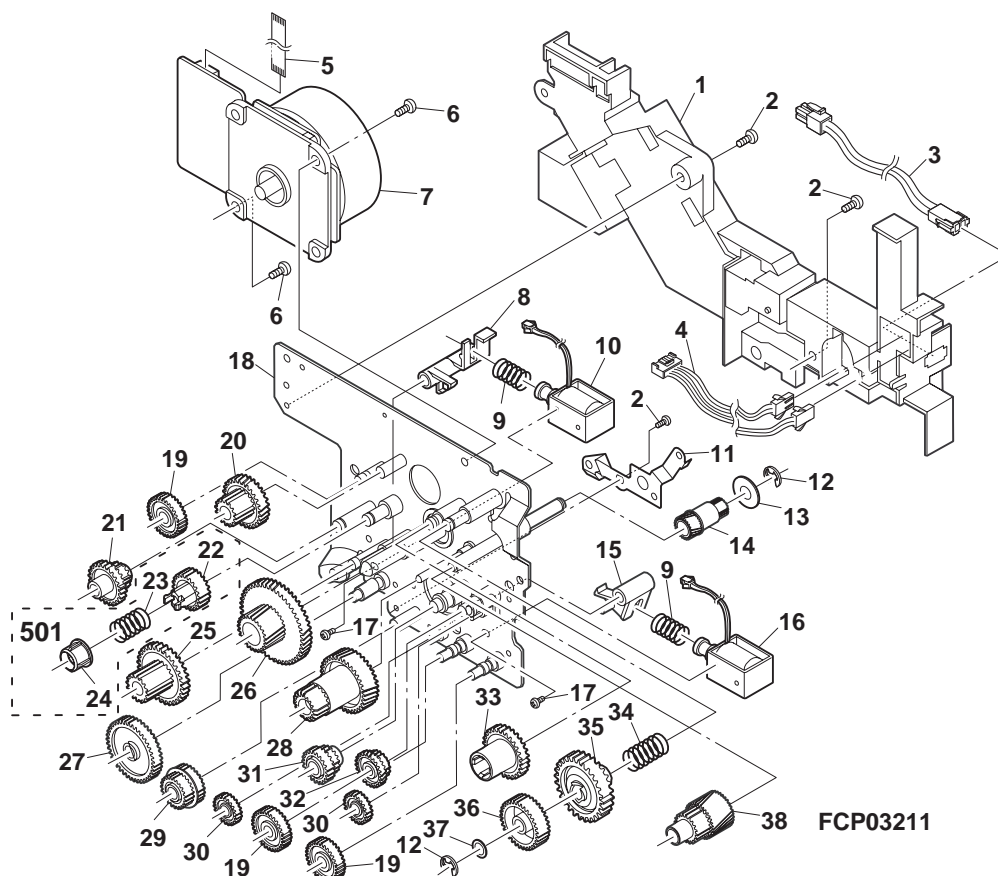
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	QSW-B0003QSZZ	AF	DS		B	Tray detect switch
2	DHA i -0091QSZZ	AF	DS	N	C	Tray SW harness
3	PTME-0013QSZZ	AL	EB	N	C	Door lock pawl
4	MSPRT0100QSZZ	AB	DJ	N	C	Door lock lever spring
5	MLEVP0022QSZZ	AE	DJ	N	C	Door lock lever
6	LPLTM0065QSZZ	AL	EB	N	C	Base reinforce plate F
7	XEP40P12000	AA	DD		C	Screw (4×12)
8	XBBS40P10000	AA	DD		C	Screw (3×10)(Japan only)
9	CPWBF0023QS51	BA	FX	N	E	Dry heater PWB (Japan only)
10	LPLTM0066QSZZ	AF	DS	N	C	Tray earth plate
11	XBBS40P08000	AA	DD		C	Screw (3×8)
12	GDA i -0002QSZZ	BH	GX	N	C	Base plate
13	XRESP40-06000	AA	DD		C	E type ring
14	LBOSZ1031FCZZ	AC	DJ		C	Clutch boss
15	MSPRC1152FCZZ	AE	DJ		C	Clutch spring
16	PP i PP0006QSZZ	AD	DJ	N	C	Clutch sleeve
17	NGERH0060QSZZ	AH	DX	N	C	Clutch gear (34T)
18	XRESP50-06000	AA	DD		C	E type ring
19	NBRGP0007QSZZ	AD	DJ	N	C	Bearing (φ6)
20	CRÖLP0039QS01	AW	FG	N	C	Paper feeding roller
21	GFTA-0005QSZZ	AC	DJ	N	C	2nd drive cover
22	XBBS40P12000	AA	DD		C	Screw (4×12)
23	PSHEZ2174FCZZ	AB	DD		C	Paper feeding sheet
24	CPWBF1177FC66	AP	EQ	N	E	Manual paper feeding sensor PWB
25	MLEVP0023QSZZ	AE	DS	N	C	MF sensor actuator
26	PCÖVP0033QSZZ	AF	DS	N	C	Manual feed sensor cover
27	LRALP0005QSZZ	AN	EQ	N	C	Base plate rail R (Except Europe)
27	LRALP0005QSZA	AQ	EQ	N	C	Base plate rail R (For Europe)
28	PSHEZ2026FCZ1	AB	DD		C	Sheet M1
29	LHLDZ0017QSZZ	AD	DJ		C	Pressure plate holder
30	MSPRC0101QSZZ	AB	DJ	N	C	Pressure plate spring
31	GFTA-0007QSZZ	AE	DS	N	C	Pressure plate cover
32	MLEVP0024QSZZ	AF	DS	N	C	Sensor lever ACT
33	LDA i U0011QSZZ	AF	DS	N	C	Sensor base
34	CPWBF1177FC65	AP	EQ	N	E	Tray sensor PWB
35	XBBS40P08000	AA	DD		C	Screw (3×8)(Japan only)
36	RHET-0004QSZZ	AP	EQ	N	B	Dry heater (tray) (Japan only)



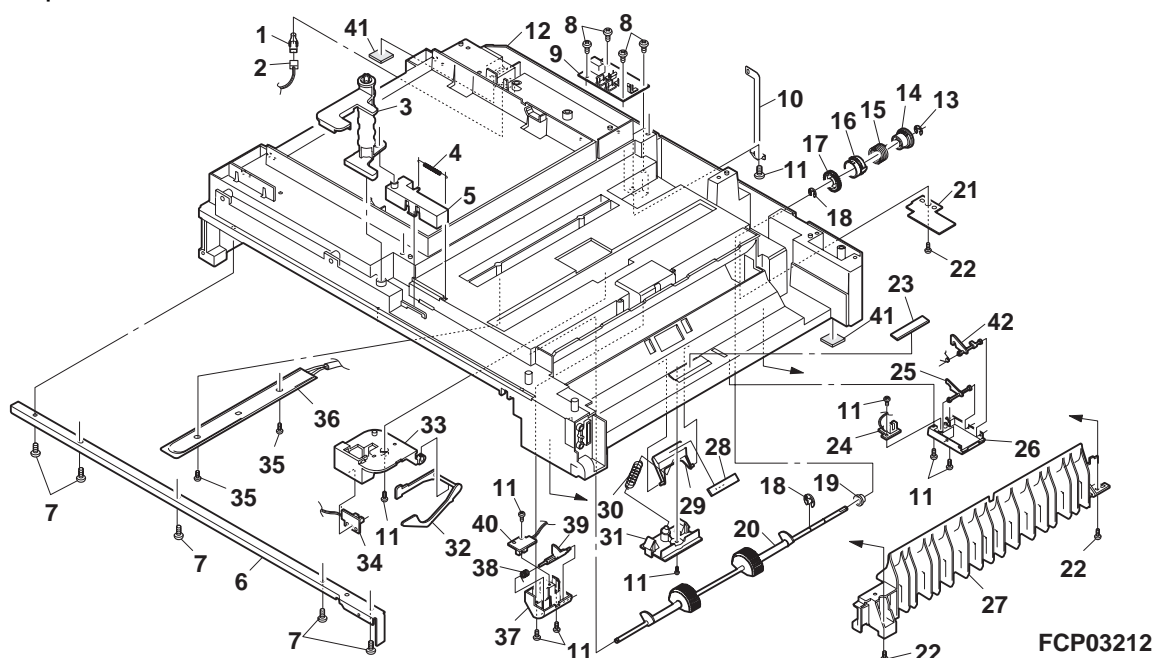
# 11 Base plate unit 1

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
37	PCÖVP0032QSZZ	AE	DJ	N	C	PS sensor cover
38	MSPRC0099QSZZ	AC	DJ	N	C	PS actuator spring
39	MLEVP0021QSZZ	AD	DJ	N	C	PS front actuator
40	CPWBF1177FC67	AP	EQ	N	E	PS sensor PWB
41	GLEGG0064FCZZ	AC	DJ		C	Rubber foot
42	MLEVP0044QSZZ	AE	DS	N	C	MF sensor actuator 2

## 10 Main drive unit



## 11 Base plate unit 1

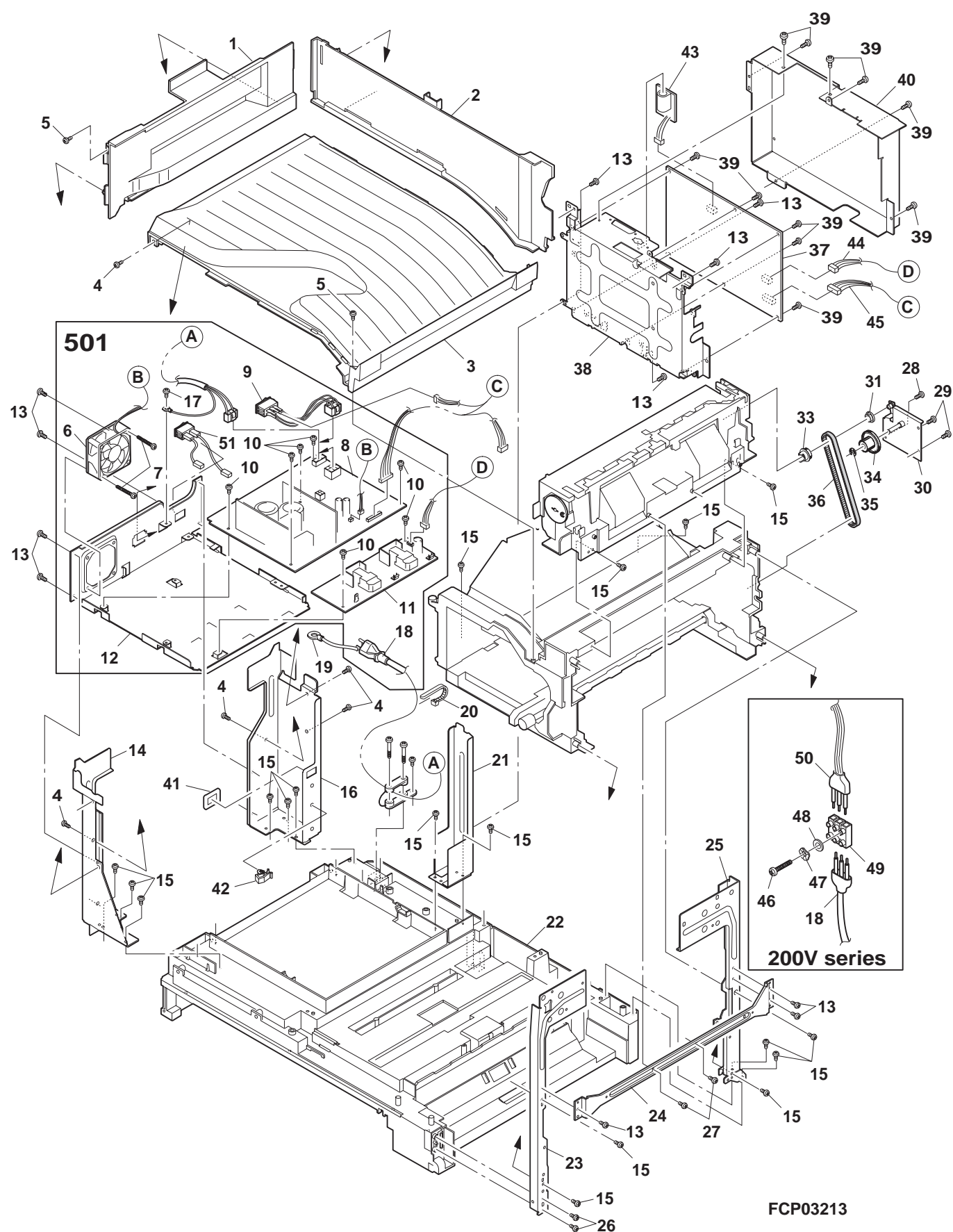




12 Base plate unit 2



# 12 Base plate unit 2



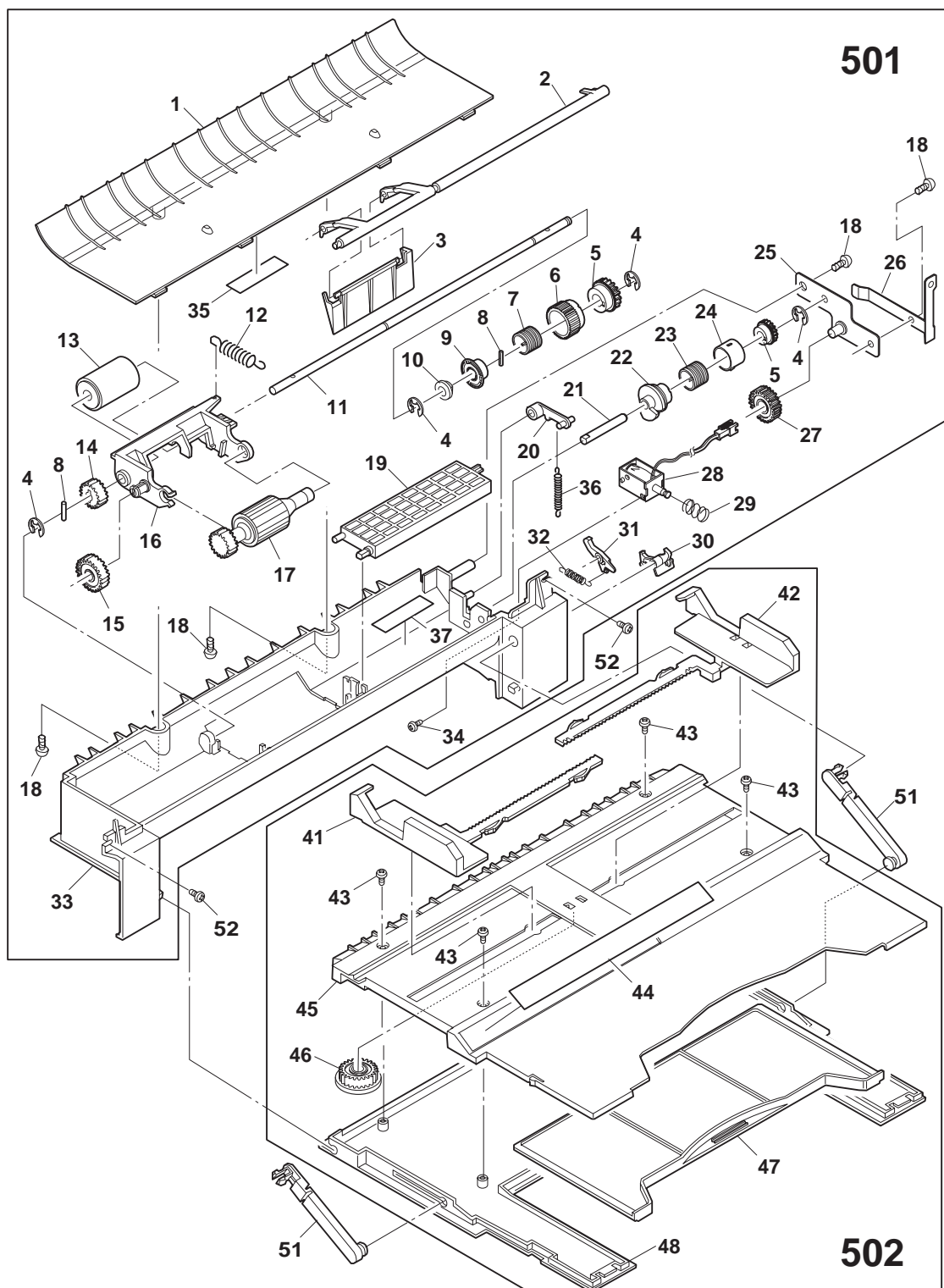


## 13

[illegible]



# 13 Manual paper feeding multi unit



FCP03214

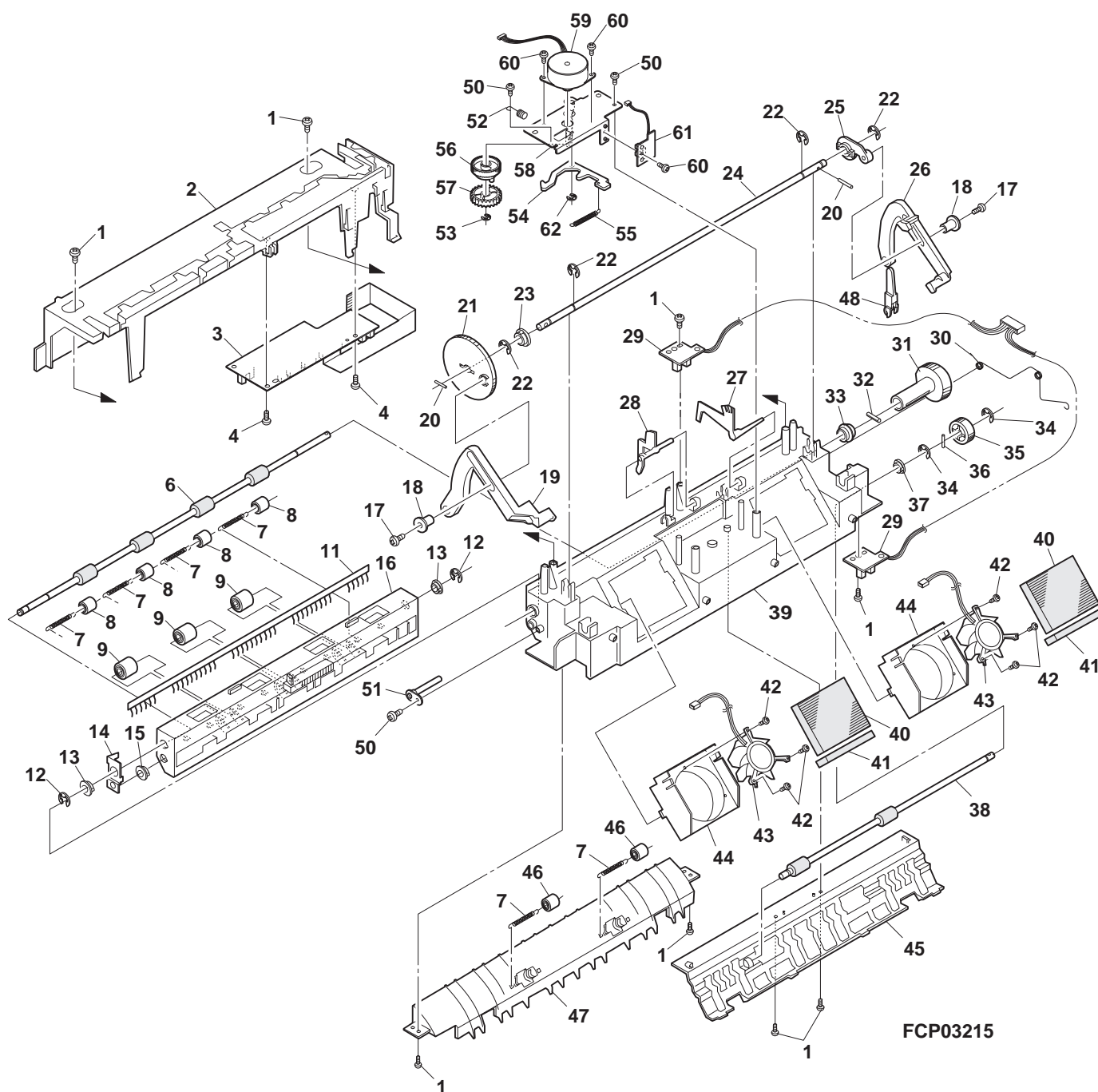


## 14

[illegible]



# 14 Delivery frame unit



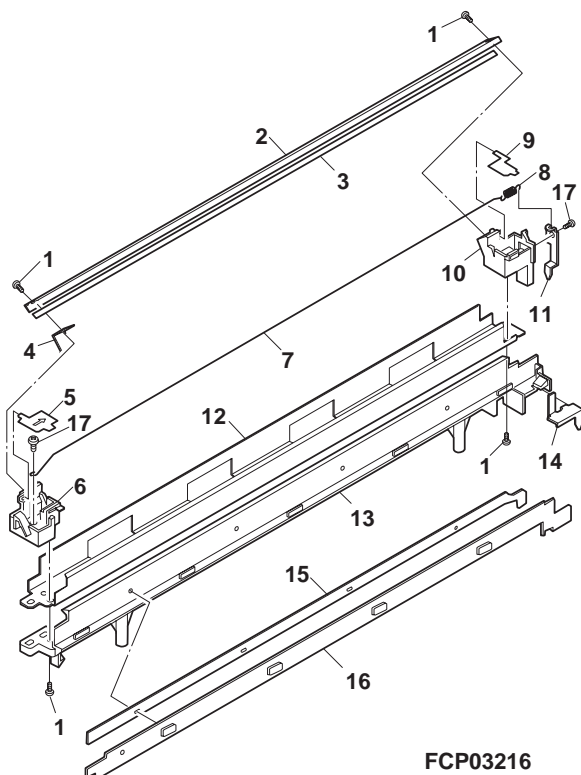


**15 TC case unit**

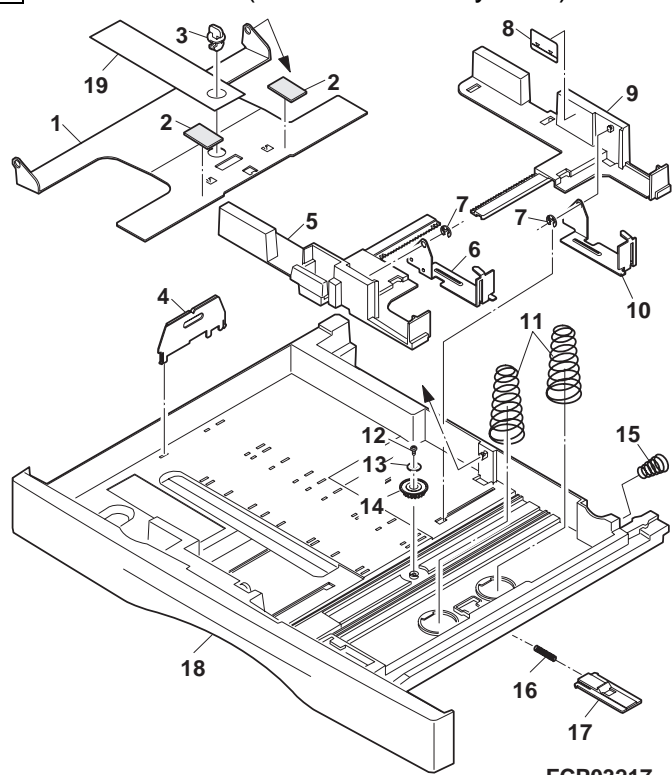
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	XEBSE30P08000	AA	DD		C	Screw (3×8)
2	PGiDH0031QSZZ	AH	DX	N	C	TC front guide
3	PSHEP0050QSZZ	AC	DJ	N	C	TC sheet
4	LPLTM0059QSZZ	AC	DJ	N	C	TC upper PG earth spring plate
5	PSHEP0051QSZZ	AB	DJ	N	C	TC cover sheet F
6	LHLDZ0030QSZZ	AD	DJ	N	C	TC holder F
7	DWiR-0466CSZZ	BG	HC		B	Charger wire
8	MSPRT0513FCZ1	AA	DJ		C	MC tension spring
9	PSHEP0052QSZZ	AB	DJ	N	C	TC cover sheet R
10	LHLDZ0032QSZZ	AD	DJ	N	C	TC holder R
11	QSLP-0009QSZZ	AD	DJ	N	C	TC electrode plate
12	PCASZ0006QSZZ	AM	EG	N	C	TC case
13	LHLDZ0031QSZZ	AK	EB	N	C	Discharge holder
14	QSLP-0008QSZZ	AD	DJ	N	C	BC electrode plate
15	LPLTZ0049QSZZ	AG	DS	N	C	Discharge plate
16	PGiDM0032QSZZ	AE	DS	N	C	Separator guide
17	XEBSD30P06000	AA	DD		C	Screw (3×6)
(Unit)						
901	CHLDZ0030QS51	BA	FX	N	E	TC unit

**16 250 sheets tray unit**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	LPLTM0053QSZZ	AS	EQ	N	C	Rotation plate
2	PSHEZ0054QSZZ	AC	DJ	N	C	Rotation plate sheet
3	LHLDW1226FCZZ	AB	DJ		C	Turn fasner
4	LPLTM2642FCZZ	AC	DJ		C	Tray rear plate
5	PGiDM0035QSZZ	AP	EQ	N	C	Guide F
6	PTME-0255FCZZ	AG	DS		C	250 Tray pawl F
7	XRESP40-06000	AA	DD		C	E type ring
8	TLABH0064QSZ1	AC	DJ	N	C	Indicator label
9	PGiDM0036QSZZ	AP	EQ	N	C	Guide R
10	PTME-0256FCZZ	AG	DS		C	250 Tray pawl R
11	MSPRC0090QSZZ	AD	DJ	N	C	Tray spring
12	XEBSD30P08000	AA	DD		C	Screw (3×8)
13	XWHS30-08100	AA	DD		C	Washer
14	NGERH0193FCZZ	AB	DD		C	UC manual feed gear
15	MSPRC1873FCZ1	AB	DJ		C	Tray spring
16	MSPRC1145FCZZ	AA	DD		C	Stopper spring
17	LSTPP0161FCZZ	AB	DD		C	Rotation plate stopper
18	GCASP0003QSZZ	AZ	FQ	N	D	Tray case
19	TTAG-0004QSZZ	AC	DJ	N	D	Tray rotation tag
(Unit)						
901	CCASP0003QS51	BG	GX	N	E	250 Tray unit

**15 TC case unit****16 250****(250 sheets tray unit)**

FCP03216



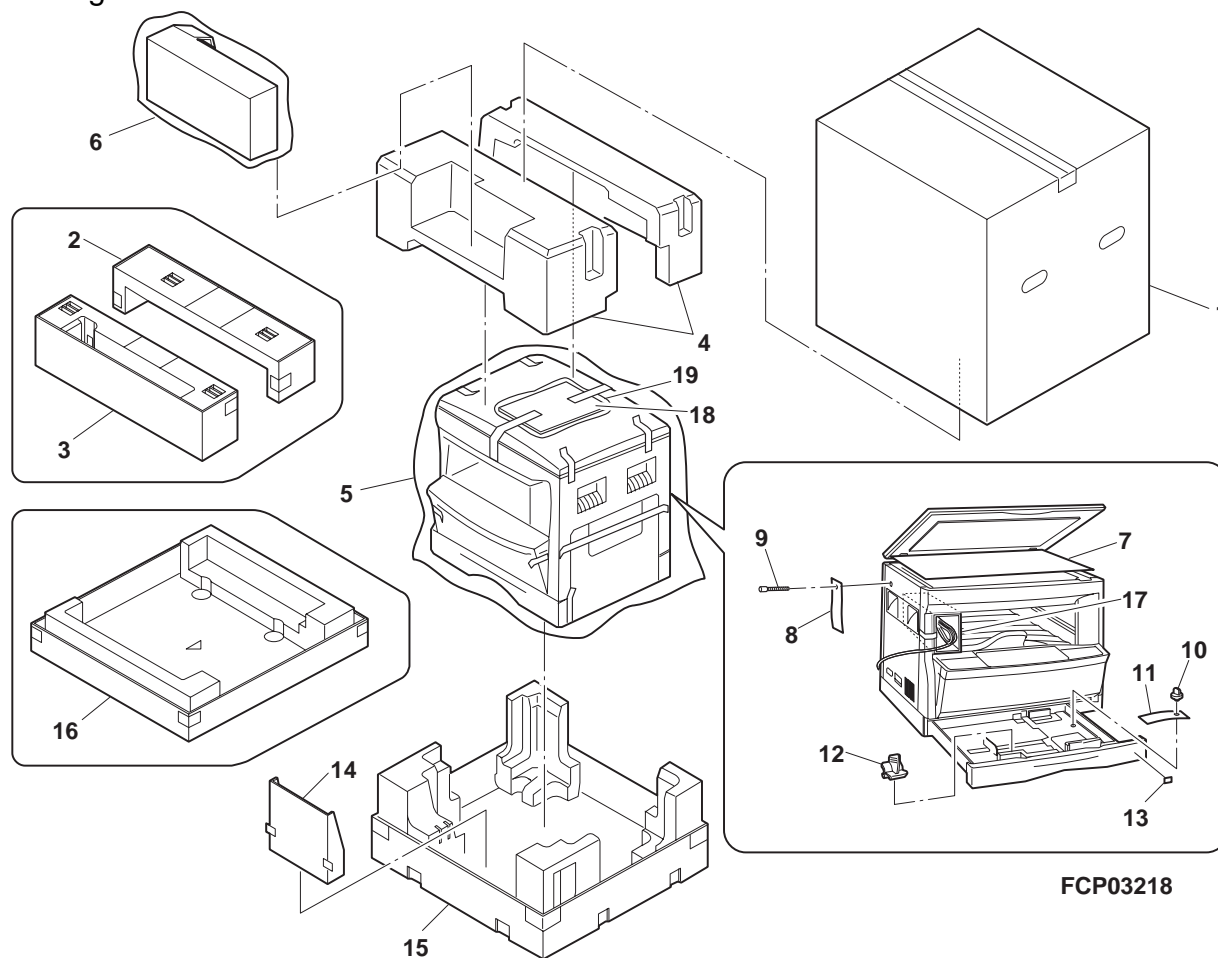
FCP03217



## 17 Packing material & Accessories

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	SPAKC0135QSZZ	AY	FQ	N	D	Packing case (Japan only) (AR-S160)
	SPAKC0100QS14	AY	FQ	N	D	Packing case (USA) (AR-160)
	SPAKC0091QSZZ	AY	FQ	N	D	Packing case (For Europe except U.Kingdom) (AR-160)
	SPAKC0100QS12	AY	FQ	N	D	Packing case (CANADA,Australia,U.Kingdom,Others) (AR-160)
	SPAKC0100QS15	AY	FQ	N	D	Packing case (USA) (AR-161)
	SPAKC0091QS11	AY	FQ	N	D	Packing case (For Europe except U.Kingdom) (AR-161)
	SPAKC0100QS13	AY	FQ	N	D	Packing case (CANADA,Australia,U.Kingdom,Others) (AR-161)
2	SPAKA0132QSZZ	AR	EQ	N	D	Top packing cushion F OC (Japan only)
3	SPAKA0131QSZZ	AT	EZ	N	D	Top packing cushion F OC (Japan only)
4	SPAKA0083QSZZ	AX	FG	N	D	Top packing cushion (Except Japan)
5	SSAKH9982QCZZ	AF	DS		D	Vinyl bag (1190×940mm)
6	UBAGF0018YSZ1	AF	DS	N	D	DV aluminum bag
7	SPAKA0134QSZZ	AE	DJ	N	D	OC protection sheet
8	TCADZ0010QSZZ	AC	DJ		D	Fixer screw caution card
9	LX-BZ0015QSZZ	AF	DS	N	C	2nd,3rd mirror fixing screw
10	LHLDW1226FCZZ	AB	DJ		C	Turn fasner
11	TTAG-0004QSZZ	AC	DJ	N	D	Tray rotation tag
12	CCLZ0005QS51	AQ	EQ		E	Charger cleaner unit
13	TLABH0065QSZZ	AN	EG	N	C	Size display label (AB series)
	TLABH0069QSZZ	AN	EG	N	C	Size display label (Inch series)
14	SPAKA0133QSZZ	AG	DS	N	D	Spacer A (Japan only)
15	CPAKA0084QS01	BA	FX	N	D	Bottom packing cushion (Except Japan)
16	SPAKA0130QSZZ	BA	FX	N	D	Bottom packing case (Japan only)
17	SPAKA0150QSZZ	AF	DS	N	D	Accessories protection packing cushion
18	TiNSJ0114QSZZ	AX	ZZ	N	D	Operation manual (Japanese) (Japan)
	TiNSE0115QSZZ	AS	EQ	N	D	Operation manual (USA)
	TiNSE0116QSZZ	AS	EQ	N	D	Operation manual (English) (CANADA,Germany,U.Kingdom,Australia)
	TiNSF0117QSZZ	BA	FX	N	D	Operation manual (French) (CANADA)
	TiNSG0118QSZZ	BB	GD	N	D	Operation manual (German) (Germany)
	TiNSS0119QSZZ	AY	FQ	N	D	Operation manual (Spanish)
	TiNSi0120QSZZ	AT	EZ	N	D	Operation manual (Italian)
	TiNSZ0121QSZZ	AY	FQ	N	D	Operation manual (Swedish)
	TiNSZ0122QSZZ	AY	FQ	N	D	Operation manual (Dutch)
19	SSAKA2343QCZZ	AA	DD		D	Vinyl bag (260×380mm)
101	TLABH0068QSZZ	AF	DS	N	C	Label (AB series)
	TLABH0078QSZZ	AF	DS	N	C	Label (Inch series)
102	GCÖVZ0023QSZZ	BA	FX	N	D	Dust cover (Japan only)

## 17 Packing material & Accessories





## 18 MCU PWB

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	QCNCM0016QSZZ	AL	EB	N	C	Connector (60pin) [CN7]
2	QCNCM0017QSZZ	AC	DJ	N	C	Connector (4pin) [CN17]
3	QCNCM0019QSZZ	AB	DJ	N	C	Connector (2pin) [CN19]
4	QCNCM0030QSZZ	AL	EB		C	Connector (60pin) [CN3]
5	QCNCM0846FCZZ	AF	DS		C	Connector (12pin) [CN12]
6	QCNCM0877FCZZ	AF	DS		C	Connector (20pin) [CN10]
7	QCNCM0923FC22	AF	DS		C	Connector (22Pin) [CN5]
8	QCNCM0923FC24	AF	DS		C	Connector (24pin) [CN11]
9	QCNCM1005MCZZ	AB	DD		C	Connector (2pin) [CN36]
10	QCNCM1006MCZZ	AB	DD		C	Connector (3pin) [CN22]
11	QCNCM1119LC0C	AC	DJ	N	C	Connector (3pin) [CN28]
12	QCNCM1119LC0D	AC	DJ	N	C	Connector (4pin) [CN15]
13	QCNCM2401SC0C	AB	DJ		C	Connector (3pin) [CN29]
14	QCNCM2401SC0D	AC	DJ		C	Connector (4pin) [CN31]
15	QCNCM2401SC0E	AC	DJ		C	Connector (5pin) [CN1]
16	QCNCM7014SC0B	AD	DJ		C	Connector (2pin) [CN18]
17	QCNCM7014SC0C	AA	DD		C	Connector (3pin) [CN32]
18	QCNCM7014SC0D	AB	DD		C	Connector (4pin) [CN27]
19	QCNCM7014SC0E	AB	DJ		C	Connector (5pin) [CN34]
20	QCNCM7014SC0F	AB	DD		C	Connector (6pin) [CN26]
21	QCNCM7014SC0G	AB	DD		C	Connector (7pin) [CN6]
22	QCNCM7014SC1A	AC	DJ		C	Connector (11pin) [CN8]
23	QCNCM7014SC1B	AD	DJ		C	Connector (12pin) [CN4]
24	QCNCM7014SC1J	AC	DD		C	Connector (10pin) [CN9]
25	QCNCP0240QCZZ	AA	DJ		C	Connector (2pin) [CN14]
26	QCNCP0242QCZZ	AA	DJ		C	Connector (2pin) [CN16]
27	QCNCP0341QCZZ	AC	DJ		C	Connector (3pin) [CN33]
28	QCNCW0015QSZZ	AE	DJ		C	Connector (5pin) [CN35]
29	QCNCW0024QSZZ	AF	DS		C	Connector (32pin) [CN2]
30	QCNCW0885FCZZ	AG	DX		C	Connector (12pin) [CN30]
32	QCNCW0948FCZ3	AC	DJ		C	Connector (3pin) [CN23,24]
33	QCNCW1124LC0D	AB	DJ		C	Connector (4pin) [CN20]
34	QCNCW1124LC0H	AC	DJ		C	Connector (8pin) [CN13]
35	QCNCW1124LC1F	AC	DJ		C	Connector (16pin) [CN25]
36	QSOCZ6408ACZZ	AB	DD		C	8P DIP socket [for IC4]
38	RCRSZ0001QSZZ	AG	DS		B	Crystal (19.6608MHZ) [X1]
39	RCRSZ0003QSZZ	AP	EQ		B	Crystal (22.000MHZ) [X2]
40	RCRSZ0004QSZZ	AP	EQ	N	B	Crystal (20.3094MHZ) [X3]
41	RMPTW4000QCJJ	AB	DD		B	Block resistor (0Ω×4) [BR4,29,30]
42	RMPTW4103QCJJ	AB	DD		B	Block resistor (10KΩ×4) [BR1,2,3,6,7,11,13-24,31,47,51,52,66-73]
43	RMPTW4203QCJJ	AA	DD		B	Block resistor (20KΩ×4) [BR43,44,45,53-65]
44	RMPTW4222QCJJ	AB	DD		B	Block resistor (2.2KΩ×4) [BR50]
45	RMPTW4330QCJJ	AB	DD		B	Block resistor (33Ω×4) [BR5,8,9,10,12,32-38,40,41,42,74-82]
47	VCCCCY1HH120J	AA	DD		C	Capacitor (50WV 12PF) [C253]
48	VCCCCY1HH180J	AA	DD		C	Capacitor (50WV 18PF) [C11,12]
49	VCCCCY1HH101J	AA	DD		C	Capacitor (50WV 100PF) [C266,CN3,7]
50	VCCUCY1AJ105Z	AC	DD		C	Capacitor (10WV 1.0μF) [C15]
51	VCEAGU1CW106M	AA	DD		C	Capacitor (16WV 10μF) [C7,9,103]
52	VCEAGU1CW107M	AB	DD		C	Capacitor (16WV 100μF) [C25,32,33,35,37,41,42,73]
53	VCEAGU1CW226M	AA	DD		C	Capacitor (16WV 22μF) [C91,98,254,255]
54	VCEAGU1CW476M	AB	DD		C	Capacitor (16WV 47μF) [C262,263]
55	VCEAGU1HW107M	AC	DD		C	Capacitor (50WV 100μF) [C74]
56	VCEAGA1VW106M	AA	DD		C	Capacitor (35WV 10μF) [C102]
57	VCEAGU1VW476M	AB	DD		C	Capacitor (35WV 47μF) [C72,75,76,96,97]
58	VCKYCY1EB223K	AA	DD		C	Capacitor (25WV 0.022μF) [C13,14,17,24,30,89]
59	VCKYCY1EF104Z	AA	DD		C	Capacitor (25WV 0.10μF) [C1,8,10,16,19,20,22,26,27,28,29,31,34]
	VCKYCY1EF104Z	AA	DD		C	Capacitor (25WV 0.10μF) [C36,43,58,62,65,69,84,85,87]
	VCKYCY1EF104Z	AA	DD		C	Capacitor (25WV 0.10μF) [C88,90,104,113,114,131-138]
	VCKYCY1EF104Z	AA	DD		C	Capacitor (25WV 0.10μF) [C200,201,202,203,205-251,CN5]
60	VCKYCY1HB102K	AA	DD	N	C	Capacitor (50WV 1000PF) [C4,5,18,21,23,77-81,105-112,115-130]
61	VCKYCY1HB222K	AA	DD		C	Capacitor (50WV 2200PF) [C39,61,68,95,101]
62	VCKYCY1HB471K	AB	DD		C	Capacitor (50WV 470PF) [C99,100,252]
63	VHDDSS133/-1	AA	DD		B	Diode (DSS133) [D2-9]
64	VHERD20EB3/-1	AB	DD		B	Zener diode (RD20EB3) [D1]
65	VHEUDZS5.6B-1	AC	DJ		B	Zener diode (UDZS5.6B) [ZD1-16]
66	VHiHG73C025FD	BE	GN		B	IC (HG73C025FD) [IC13]
67	VHiH8S/2350FP	AY	FQ		B	CPU (H8S/2350FP) [IC1]
68	VHiLM358PS/-S	AC	DJ		B	IC (LM358PS) [IC10]
69	VHiMC7805CT-2	AE	DS		B	IC (MC7805CT-2) [IC15]
70	VHiM24C04BN6/	AG	DX	N	B	IC (M24C04BN6) [IC4]
71	VHiM51953BL-1	AF	DS		B	IC (M51953BL) [IC2]
72	VHiM66236FP-1	AT	EZ		B	IC (M66236FP) [IC14]
73	VHiNJM2903M/-	AD	DJ		B	IC (NJM2903M) [IC16]
74	VHiNJM3414M-1	AF	DX		B	IC (NJM3414M) [IC9]
75	VHiSLA7027MUL	AQ	EQ		B	IC (SLA7027MUL) [IC25]
76	VHiSTA401A/-1	AP	EQ		B	IC (STA401A) [IC26]
77	VHiTA7291S/-1	AF	DS		B	IC (TA7291S) [IC27]



## 18 MCU PWB

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
78	VH i TD62503F/-	AG	DX		B	IC (TD62503F) [IC31]
79	VH i ULN2003AN1	AE	DJ		B	IC (ULN2003AN1) [IC28,29,38]
80	VH i W24258A12J	AN	EG	N	B	IC (W24258A12J) [IC18,19,21,22,35,37]
81	VH i 29F400BCA1	BA	FX	N	B	IC (29F400BCA1)(AR-S160/AR-160) [IC20]
	VH i 29F400BCB1	BA	FX	N	B	IC (29F400BCB1)(AR-161) [IC20]
82	VH i 65808GN146	BF	GN	N	B	IC (65808GN146) [IC5]
83	VH i 74HCT244MF	AH	DX		B	IC (74HCT244MF) [IC8]
84	VH i 74LS244NS1	AH	DX		B	IC (74LS244NS1) [IC30,32,33]
85	VH i 74VHC08/-1	AE	DS		B	IC (74VHC08) [IC3,39]
86	VH i TC74ACT32F	AF	DS		B	IC (TC74ACT32F) [IC12]
87	VHV i CPN38// -1	AF	DS		B	IC protector (ICPN38) [F1,2,3,5,6,7]
88	VRS-CY1JD000J	AA	DD		C	Resistor (1/16W 0Ω ±5%) [R94,115,202,FB3,4,9]
89	VRS-CY1JD100J	AA	DD		C	Resistor (1/16W 10Ω ±5%) [R8,51-56,61-66]
90	VRS-CY1JD101J	AA	DD		C	Resistor (1/16W 100Ω ±5%) [R3,4,7,117,118]
91	VRS-CY1JD102J	AA	DD		C	Resistor (1/16W 1.0KΩ ±5%) [R13-18,24,25,33,137,201]
92	VRS-CY1JD103F	AB	DD		C	Resistor (1/16W 10KΩ ±1%) [R29,31,72,74]
93	VRS-CY1JD103J	AA	DD		C	Resistor (1/16W 10KΩ ±5%) [R1,2,5,6,10,23,50,70,73,85,93,97]
94	VRS-CY1JD680J	AA	DD		C	Resistor (1/16W 68Ω ±5%) [R105]
95	VRS-CY1JD221J	AA	DD		C	Resistor (1/16W 220Ω ±5%) [R107]
96	VRS-CY1JD511J	AA	DD		C	Resistor (1/16W 510Ω ±5%) [R103]
97	VRS-CY1JD203J	AA	DD		C	Resistor (1/16W 20KΩ ±5%) [R27,32,34,35,57-60,67,68,138,139,140]
98	VRS-CY1JD205J	AA	DD		C	Resistor (1/16W 2.0MΩ ±5%) [R28,30]
99	VRS-CY1JD220F	AA	DD	N	C	Resistor (1/16W 22Ω ±1%) [R76]
101	VRS-CY1JD242F	AA	DD		C	Resistor (1/16W 2.4KΩ ±1%) [R69,75]
102	VRS-CY1JD242J	AA	DD		C	Resistor (1/16W 2.4KΩ ±5%) [R81,100,109]
103	VRS-CY1JD330J	AA	DD		C	Resistor (1/16W 30Ω ±5%) [R36-49]
104	VRS-CY1JD331J	AA	DD		C	Resistor (1/16W 330Ω ±5%) [R12,106,FB1]
105	VRS-CY1JD472J	AA	DD		C	Resistor (1/16W 4.7KΩ ±5%) [R19,21,26,77,78,79,87]
106	VRS-CY1JD473J	AA	DD		C	Resistor (1/16W 47KΩ ±5%) [R101,102,113,114]
107	VRS-RE3DA1R0J	AB	DD		C	Resistor (2W 1.0Ω ±5%) [R104,108]
108	VRS-RE3DA131J	AC	DD		C	Resistor (2W 130Ω ±5%) [R71]
109	VRS-TP2BD221J	AB	DD		C	Resistor (1/8W 220Ω ±5%) [R80,82,83,84,86,88,89]
110	VRS-TP2BD472J	AA	DD		C	Resistor (1/8W 4.7KΩ ±5%) [R111,112]
111	VRS-TP2BD473J	AA	DD		C	Resistor (1/8W 47KΩ ±5%) [R110]
112	VSDTC114EK/-1	AB	DD		B	Transistor (DTC114EK) [Q1,3]
113	VS2SA1036KQRC	AB	DD		B	Transistor (2SA1036KQRC) [Q2]
114	VH i SC65165V6T	BW	RR	N	B	16MDRAM (SC65165V6T)(AR-161...USA,CANADA) [IC36]
115	VH i 16163CLT-6	BA	FX	N	B	64MDRAM (16163CLT-6)(AR-161...USA,CANADA) [IC34]
116	VHD1N4005E/-1	AB	DJ		B	Diode (1N4005E) [D10]
117	RF i LN0019GCZZ	AC	DJ		B	Bead filter [FB2,10,11]
118	VRS-TS2AD101J	AA	DD		C	Resistor (1/10W 100Ω ±5%) [FB8]
119	VRD-HT2EY103J	AA	DD		C	Resistor (1/4W 10KΩ ±5%)
	(Unit)					
901	CPWBX0021QS51	CD	UD	N	E	MCU PWB (AR-S160/AR-160)
	CPWBX0021QS54	CD	UD	N	E	MCU PWB (AR-161...USA,CANADA)
	CPWBX0021QS53	CD	UD	N	E	MCU PWB (AR-161...Except USA,CANADA)

## 19 COPY-Operation PWB

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	QCNCW0020QSZZ	AG	DS	N	C	Connector (12pin) [CN1]
2	QCNCW0021QSZZ	AF	DS	N	C	Connector (15pin) [CN4]
3	QCNCW0022QSZZ	AE	DJ	N	C	Connector (25pin) [CN3]
4	QCNCW0023QSZZ	AE	DS	N	C	Connector (19pin) [CN2]
5	QSW-P0008QSZZ	AC	DJ	N	B	Switch (EVQ-23G-04K) [K1-5,7,8,9,11-14,16-20,22-33]
6	RCRMZ0001QSZZ	AE	DS	N	B	Crystal (9.8304MHZ) [X1]
7	RCRSZ0005QSZZ	AF	DS	N	B	Crystal (MX38T)(32.768KHZ) [X2]
8	VCCCCY1HH150J	AB	DD		C	Capacitor (50WV 15PF) [C12,13]
9	VCCCCY1HH300J	AB	DD		C	Capacitor (50WV 30PF) [C14,15]
10	VCEAJU1CW476M	AB	DD		C	Capacitor (16WV 47μF) [C1]
11	VCKYCY1HB102K	AA	DD	N	C	Capacitor (50WV 1000PF) [C2-7,10,11,18]
12	VCKYCY1HF103Z	AA	DD		C	Capacitor (50WV 0.010μF) [C8]
13	VCCUCY1AJ105Z	AC	DD		C	Capacitor (10WV 1.0μF) [C9]
14	VCKYCY1HF223Z	AA	DD		C	Capacitor (50WV 0.022μF) [C17]
15	VHDDSS133// -1	AA	DD		B	Diode (DSS133) [D56-67]
16	VH i H8/3643/-1	AU	EZ	N	B	IC (H8/3643) [IC1]
17	VH i TB62706AN/	AS	EQ	N	B	IC (TB62706AN) [IC3]
18	VH i TD62785F//	AN	EQ	N	B	IC (TD62785F) [IC2]
19	VHPLTC3650G01	AQ	EQ		B	Photo transistor (LTC3650G01) [U1]
20	VHPMPG3864K-J	AC	DJ		B	LED (Green) (MPG3864K)(Japan,Australia) [D1-4,6,7,10,11,12,14,15,16,18-24]
	VHPMPG3864K-J	AC	DJ		B	LED (Green) (MPG3864K)(Japan,Australia) [D26-33,35,36,37,39,40,41,43,44,46-50,52]
	VHPMPG3864K-J	AC	DJ		B	LED (Green) (MPG3864K)(Except Japan,Australia) [D1-4,6,7,10,11,12,14,15,16,18-20,22,23,24]



**19 COPY-Operation PWB**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
20	VHPMPG3864K-J	AC	DJ		B	LED (Green) (MPG3864K)(Except Japan,Australia) [D26-32,35,36,37,39,40,41,43,44,46-50,52]
21	VHPMVR3864K-J	AC	DJ		B	LED (Red) (MVR3864K) [D5,8,9,13,17,42,45,51,53,54]
22	VRD-RC2EY161J	AA	DD		C	Resistor (1/4W 160Ω ±5%) [R1,9]
23	VRS-CY1JD000J	AA	DD		C	Resistor (1/16W 0Ω ±5%) [R58]
24	VRS-CY1JD103J	AA	DD		C	Resistor (1/16W 10KΩ ±5%) [R10-17,20-24,26-44,46-49,51]
25	VRS-CY1JD105J	AA	DD		C	Resistor (1/16W 1.0MΩ ±5%) [R45]
26	VRS-CY1JD123J	AA	DD		C	Resistor (1/16W 12KΩ ±5%) [R18]
27	VRS-CY1JD471J	AA	DD		C	Resistor (1/16W 470Ω ±5%) [R8]
28	VRS-TP2BD6R8J	AA	DD	N	C	Resistor (1/8W 6.8Ω ±5%) [R2-7]
29	VS2SA1162-Y-1	AB	DD		B	Transistor (2SA1162) [Q1]
30	VS2SC2712Y/-1	AB	DJ		B	Transistor (2SC2712Y) [Q4]
	(Unit)					
901	CPWBN0024QS51	BR	LP	N	E	COPY-Operation PWB (Japan,Australia)
	CPWBN0024QS52	BQ	LP	N	E	COPY-Operation PWB (Except Japan,Australia)

**20 Duplex/P-out sensor PWB**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i -0100QSZZ	AG	DX	N	C	Duplex / P-out sensor harness
2	LBNDJ0037FCZ1	AA	DJ		C	Wire band (T18S)
3	VCKYPU1HB102K	AA	DD		C	Capacitor (50WV 0.001μF)
4	VHPGP1S53V/-1	AE	DS		B	Photo transistor (GP1S53V)
	(Unit)					
901	CPWBF1177FC64	AP	EQ	N	E	Duplex / P-out sensor PWB

**21 MHPS PWB**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i -0096QSZZ	AF	DS	N	C	Scanner HP sensor harness
2	LBNDJ0037FCZ1	AA	DJ		C	Wire band (T18S)
3	VCKYPU1HB102K	AA	DD		C	Capacitor (50WV 0.001μF)
4	VHPGP1S53V/-1	AE	DS		B	Photo transistor (GP1S53V)
	(Unit)					
901	CPWBF1177FC63	AP	EQ	N	E	MHPS PWB

**22 Tray sensor PWB**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i -0092QSZZ	AF	DS	N	C	Tray empty sensor harness
2	LBNDJ0037FCZ1	AA	DJ		C	Wire band (T18S)
3	VCKYPU1HB102K	AA	DD		C	Capacitor (50WV 0.001μF)
4	VHPGP1S53V/-1	AE	DS		B	Photo transistor (GP1S53V)
	(Unit)					
901	CPWBF1177FC65	AP	EQ	N	E	Tray sensor PWB

**23 Manual paper feeding sensor PWB**

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i -0093QSZZ	AF	DS	N	C	Hand empty sensor harness
2	LBNDJ0037FCZ1	AA	DJ		C	Wire band (T18S)
3	VCKYPU1HB102K	AA	DD		C	Capacitor (50WV 0.001μF)
4	VHPGP1S53V/-1	AE	DS		B	Photo transistor (GP1S53V)
	(Unit)					
901	CPWBF1177FC66	AP	EQ	N	E	Manual paper feeding sensor PWB



## 24 PS sensor PWB

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i - 0094QSZZ	AF	DS	N	C	Paper in sensor harness
2	LBNDJ0037FCZ1	AA	DJ		C	Wire band (T18S)
3	VCKYPU1HB102K	AA	DD		C	Capacitor (50WV 0.001μF)
4	VHPGP1S53V/-1	AE	DS		B	Photo transistor (GP1S53V)
	(Unit)					
901	CPWBF1177FC67	AP	EQ	N	E	PS sensor PWB

## 25 RCU PWB

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	DHA i - 0133QSZZ	AH	DX	N	C	RCS PWB harness
2	QCNCM0029QSZZ	AK	DX	N	C	Connector (MD-S5130)(5pin)
	(Unit)					
901	CPWBF0033QS51	AP	EQ	N	E	RCU PWB

## 26 Low voltage power supply unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
1	0KY0D113A003/	AX	FG	N	B	Diode (100V series) [D1]
	0KY0D119A006/	AW	FG	N	B	Diode (200V series) [D1]
2	0KY0D157A006/	AF	DS	N	B	Diode [D2,3]
3	0KY0D202B001/	AZ	FQ	N	B	Diode (100V series) [D116]
	0KY0D202B006/	AZ	FQ	N	B	Diode (200V series) [D116]
4	0KY0D206B003/	AY	FQ	N	B	Diode [D101]
5	0KY0D208B006/	AQ	EQ	N	B	Diode (100V series) [D51]
	0KY0D264A010/	AN	EQ	N	B	Diode (200V series) [D51]
6	0KY0D219B006/	AQ	EQ	N	B	Diode [D903]
7	0KY0D251A002/	AD	DJ	N	B	Diode [D4,104,105,108,111,118,120,904]
8	0KY0D264A006/	AL	EB	N	B	Diode [D107]
9	0KY0D265A002/	AK	DX	N	B	Diode [D8]
10	0KY0D466A024/	AE	DS	N	B	Diode [D119]
11	0KY0D466A048/	AE	DS	N	B	Diode [D117]
12	0KY0D466A096/	AE	DS	N	B	Diode [D7]
13	0KY0D466A105/	AU	EZ	N	B	Diode [D11,103]
14	0KY0D513A406/	AU	EZ	N	B	Triac (100V series) [TRA2]
	0KY0D513A606/	AU	EZ	N	B	Triac (200V series) [TRA2]
15	0KY0D517A416/	BC	GD	N	B	Triac (100V series) [TRA1]
	0KY0D517A616/	BC	GJ	N	B	Triac (200V series) [TRA1]
16	0KY0T502A001/	AY	FQ	N	B	Transistor [Q112]
17	0KY0T415A003/	AT	EZ	N	B	Transistor [Q902]
18	0KY0T421A001/	BA	FX	N	B	Transistor [Q901]
19	0KY0T643A001/	BB	GD	N	B	Transistor (100V series) [Q1]
	0KY0T617A001/	BA	FX	N	B	Transistor (200V series) [Q1]
20	0KY0T351A005/	AF	DS	N	B	Transistor [Q101,103,113,903,904]
21	0KY0H112A001/	AN	EQ	N	B	IC [IC902]
22	0KY0H128A001/	AZ	FQ	N	B	IC [IC1]
23	0KY0H130A012/	AT	EZ	N	B	IC [IC102]
24	0KY0H141A001/	AZ	FQ	N	B	IC [IC101]
25	0KY0H153A001/	AP	EQ	N	B	IC [IC103,901]
26	0KY0H719A001/	AN	EG	N	B	Photo coupler (100V series) [PC1,2,4]
	0KY0H723A001/	AP	EQ	N	B	Photo coupler (200V series) [PC1,2,4]
27	0KY0H725A001/	AV	FG	N	B	Photo coupler [PC10]
28	0KY0D719A471/	AM	EG	N	B	Varister (100V series) [Z1,2]
	0KY0D719A471/	AM	EG	N	B	Varister (200V series) [Z1]
29	0KY0K651A362/	AV	FG	N	B	Arrester (100V series) [AL1]
30	0KY0D802A101/	AS	EQ	N	B	Fuse resistor [PTC101]
31	0KY0R153U100/	AC	DJ	N	C	Resistor [R118,150,156]
32	0KY0R153U220/	AC	DJ	N	C	Resistor [R24]
33	0KY0R153U221/	AC	DJ	N	C	Resistor [R104]
34	0KY0R153U331/	AC	DJ	N	C	Resistor [R107,109]
35	0KY0R153U391/	AC	DJ	N	C	Resistor [R122]
36	0KY0R153U471/	AC	DJ	N	C	Resistor [R37]
37	0KY0R153U102/	AC	DJ	N	C	Resistor [R8,33,142,154]
38	0KY0R153U152/	AC	DJ	N	C	Resistor [R103]
39	0KY0R153U222/	AC	DJ	N	C	Resistor [R106,128,144,907]
40	0KY0R153U272/	AC	DJ	N	C	Resistor [R143]
41	0KY0R153U332/	AC	DJ	N	C	Resistor [R110,119]
42	0KY0R153U472/	AC	DJ	N	C	Resistor [R14,108]
43	0KY0R153U103/	AC	DJ	N	C	Resistor [R23,27,28,30,120,123,901]
44	0KY0R153U123/	AC	DJ	N	C	Resistor [R114]
45	0KY0R153U153/	AC	DJ	N	C	Resistor [R113,127]
46	0KY0R153U223/	AC	DJ	N	C	Resistor [R105]



## 26 Low voltage power supply unit

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ex.	Ja.			
47	0KY0R153U273/	AC	DJ	N	C	Resistor [R117,153]
48	0KY0R153U473/	AC	DJ	N	C	Resistor [R29,124]
49	0KY0R153U683/	AC	DJ	N	C	Resistor [R111,126]
50	0KY0R153U104/	AC	DJ	N	C	Resistor [R15]
51	0KY0R153U224/	AC	DJ	N	C	Resistor [R141]
52	0KY0R153U105/	AC	DJ	N	C	Resistor [R155]
53	0KY0R163B564/	AE	DJ	N	C	Resistor [R6]
54	0KY0R353U100/	AD	DJ	N	C	Resistor [R32]
55	0KY0R353U330/	AD	DJ	N	C	Resistor [R902]
56	0KY0R353U181/	AD	DJ	N	C	Resistor [R131]
57	0KY0R353U221/	AD	DJ	N	C	Resistor (100V series) [R26,115]
	0KY0R353U241/	AD	DJ	N	C	Resistor (200V series) [R26]
	0KY0R353U271/	AD	DJ	N	C	Resistor (100V series) [R34]
58	0KY0R353U221/	AD	DJ	N	C	Resistor (200V series) [R34,115]
	0KY0R353U431/	AD	DJ	N	C	Resistor [R904]
60	0KY0R353U821/	AD	DJ	N	C	Resistor [R903]
61	0KY0R353U102/	AD	DJ	N	C	Resistor [R909]
62	0KY0R353U122/	AD	DJ	N	C	Resistor [R905]
63	0KY0R353U392/	AD	DJ	N	C	Resistor [R121]
64	0KY0R353U153/	AD	DJ	N	C	Resistor [R116]
65	0KY0R353U223/	AD	DJ	N	C	Resistor [R35,36]
66	0KY0R362U100/	AG	DX	N	C	Resistor [R40]
67	0KY0R451C220/	AE	DS	N	C	Resistor (100V series) [R9,10]
	0KY0R452D100/	AF	DS	N	C	Resistor (200V series) [R9,10]
68	0KY0R451C101/	AE	DS	N	C	Resistor [R3]
69	0KY0R451C121/	AE	DS	N	C	Resistor [R4]
70	0KY0R451C222/	AF	DS	N	C	Resistor [R132]
71	0KY0R452D100/	AF	DS	N	C	Resistor [R38]
72	0KY0R452D101/	AF	DS	N	C	Resistor [R145,146]
73	0KY0R452D153/	AF	DS	N	C	Resistor (100V series) [R11,12]
	0KY0R452D473/	AF	DS	N	C	Resistor (200V series) [R11,12]
74	0KY0R452D273/	AF	DS	N	C	Resistor (100V series) [R18,19]
	0KY0R452D683/	AF	DS	N	C	Resistor (200V series) [R18,19]
75	0KY0R452D563/	AF	DS	N	C	Resistor (100V series) [R13]
	0KY0R452D473/	AF	DS	N	C	Resistor (200V series) [R13,16,22]
76	0KY0R516FR01/	AR	EQ	N	C	Resistor [R908]
77	0KY0R516FR05/	AR	EQ	N	C	Resistor (100V series) [R25,139,140]
	0KY0R516FR15/	AR	EQ	N	C	Resistor (200V series) [R25]
	0KY0R516FR05/	AR	EQ	N	C	Resistor (200V series) [R139,140]
78	0KY0R522F100/	AU	EZ	N	C	Resistor [R7]
79	0KY0R854E102/	AG	DS	N	B	Variable resistor [VR101,102]
80	0KY0C151E101/	AD	DJ	N	C	Capacitor [C117]
81	0KY0C151M221/	AE	DS	N	C	Capacitor [C110]
82	0KY0C171E331/	AD	DJ	N	C	Capacitor [C19]
83	0KY0C1A9R221/	AG	DS	N	C	Capacitor (100V series) [C10,104]
	0KY0C1A8S470/	AG	DS	N	C	Capacitor (200V series) [C10]
	0KY0C1A9R221/	AG	DS	N	C	Capacitor (200V series) [C104]
84	0KY0C1A9R331/	AG	DX	N	C	Capacitor [C101]
85	0KY0C1A9R471/	AG	DX	N	C	Capacitor (100V series) [C51]
86	0KY0C1H6Q222/	AH	DX	N	C	Capacitor (100V series) [C12,13]
	0KY0C1H6Q472/	AK	EB	N	C	Capacitor (200V series) [C12,C13,C61,C62]
87	0KY0C1H6Q472/	AK	EB	N	C	Capacitor (100V series) [C2,3]
88	0KY0C245Q224/	AN	EG	N	C	Capacitor [C4,7]
89	0KY0C251E102/	AE	DJ	N	C	Capacitor [C23,109,121,905]
90	0KY0C251E472/	AE	DJ	N	C	Capacitor [C17,902]
91	0KY0C251E103/	AE	DJ	N	C	Capacitor [C15,24,107,108,118,123]
92	0KY0C251E223/	AE	DS	N	C	Capacitor [C20]
93	0KY0C251E333/	AE	DS	N	C	Capacitor [C16]
94	0KY0C251E473/	AF	DS	N	C	Capacitor [C5]
95	0KY0C251E104/	AG	DS	N	C	Capacitor [C105,111]
96	0KY0C2X0Q104/	AR	EQ	N	C	Capacitor [C6]
97	0KY0C364E4R7/	AH	DX	N	C	Capacitor [C18,115,116]
98	0KY0C374D820/	AH	DX	N	C	Capacitor [C14]
99	0KY0C374D331/	AN	EG	N	C	Capacitor [C112]
100	0KY0C375B471/	AN	EG	N	C	Capacitor [C113,903]
101	0KY0C3L2A332/	AT	EZ	N	C	Capacitor [C119,153]
102	0KY0C3L2B152/	AS	EQ	N	C	Capacitor [C901]
103	0KY0C3L3L102/	BD	GJ	N	C	Capacitor (100V series) [C8,22]
	0KY0C3J5M181/	BC	GD	N	C	Capacitor (200V series) [C8,22]
104	0KY0C3L7D102/	AR	EQ	N	C	Capacitor [C102,103,114]
105	0KY0L100C0022	BA	FX	N	C	Coil (100V series) [L104]
	0KY0L100C002/	BC	GJ	N	C	Coil (200V series) [L104]
106	0KY0L100E0112	BB	GD	N	C	Coil (100V series) [L101]
	0KY0L100E011/	BD	GN	N	C	Coil (200V series) [L101]
107	0KY0L107R202/	AZ	FX	N	C	Coil (100V series) [L7,8]
	0KY0L115J602/	AX	FG	N	C	Coil (200V series) [L7]
108	0KY0L200Q0362	BE	GN	N	B	Transformer (100V series) [T1]
	0KY0L200Q036/	BF	GN	N	B	Transformer (200V series) [T1]
109	0KY0L551A001/	AE	DS	N	B	Bead filter (100V series) [BEA51,101,102,104]
	0KY0L551A001/	AE	DS	N	B	Bead filter (200V series) [BEA101,102,104]







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【C】						
CARMP0010QS01	572 240 0343	1- 12	AD	DJ	N	C
CARMP0011QS01	572 240 0344	1- 13	AD	DJ	N	C
CBOX-0002YS52	572 307 0411	8- 1	BE	GN	N	E
CBOX-0002YS54	572 307 0412	8- 1	BF	GN	N	E
CBOX-0003YS52	572 307 0414	8- 4	AZ	FQ	N	E
CBTN-0016QS01	572 170 0453	2- 12	AN	EG	N	C
CBTN-0019QS01	572 170 0451	2- 10	AG	DX	N	C
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CBTN-0022QS01	572 170 0455	2- 8	AF	DS	N	C
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CCAB-0012QS02	572 107 1806	1- 10	BC	GJ	N	D
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CCAB-0012QS05	572 107 1809	1- 10	BC	GJ	N	D
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CFiX-0008QS51	572 211 0698	1-502	BF	GN	N	E
CFiX-0008QS52	572 211 0699	1-502	BF	GN	N	E
CFiX-0008QS53	572 211 0700	1-502	BC	GJ	N	E
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CHAi-0109QS51	572 427 1637	6- 10	AN	EG	N	E
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CPLTM0029QS01	572 221 6941	5- 9	AH	DX		C
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CPLTM0075QS01	572 221 7036	14- 58	AL	EB	N	C
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〃	572 684 3343	28-901	AY	FQ	N	E
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CPWBF0025QS51	572 684 3299	2- 17	AZ	FQ	N	E
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CPWBF0033QS51	572 684 3302	12- 43	AP	EQ	N	E
〃	572 684 3302	25-901	AP	EQ	N	E
CPWBF1177FC63	572 684 3303	4- 22	AP	EQ	N	E
〃	572 684 3303	21-901	AP	EQ	N	E
CPWBF1177FC64	572 684 3304	14- 29	AP	EQ	N	E
〃	572 684 3304	20-901	AP	EQ	N	E
CPWBF1177FC65	572 684 3305	11- 34	AP	EQ	N	E
〃	572 684 3305	22-901	AP	EQ	N	E
CPWBF1177FC66	572 684 3306	11- 24	AP	EQ	N	E
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CPWBF1177FC67	572 684 3307	11- 40	AP	EQ	N	E
〃	572 684 3307	24-901	AP	EQ	N	E
CPWBF1177FC68	572 684 3308	14- 61	AP	EQ	N	E
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〃	572 684 3309	19-901	BR	LP	N	E
CPWBN0024QS52	572 684 3310	2- 19	BQ	LP	N	E
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〃	572 684 3316	18-901	CD	UD	N	E

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			Ex.	Ja.		
CPWBX0021QS53	572 684 3318	12- 37	CD	UD	N	E
"	572 684 3318	18-901	CD	UD	N	E
CPWBX0021QS54	572 684 3319	12- 37	CD	UD	N	E
"	572 684 3319	18-901	CD	UD	N	E
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CROLP0039QS01	572 287 1888	11- 20	AW	FG	N	C
CROLP1115FC01	572 287 1471	13- 17	AN	EG		C
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CSLi-0103FC31	572 256 0015	5- 7	AF	DS		E
CSOU-0009QS51	572 226 0599	13-502	BC	GJ	N	E
CSOU-0009QS52	572 226 0600	13-502	BD	GJ	N	E
CSW-M0007QS51	572 530 0680	6- 2	AQ	EQ	N	E
CTHM-0018FC01	572 644 0014	9- 2	AR	EQ		B
【D】						
DHAI-0065QSZZ	572 542 1431	9- 3	AF	DS	N	C
DHAI-0089QSZZ	572 542 1432	10- 4	AH	DX	N	C
DHAI-0090QSZZ	572 542 1433	6- 45	AF	DS	N	C
DHAI-0091QSZZ	572 542 1434	11- 2	AF	DS	N	C
DHAI-0092QSZZ	572 542 1435	22- 1	AF	DS	N	C
DHAI-0093QSZZ	572 542 1436	23- 1	AF	DS	N	C
DHAI-0094QSZZ	572 542 1437	24- 1	AF	DS	N	C
DHAI-0096QSZZ	572 542 1438	21- 1	AF	DS	N	C
DHAI-0097QSZZ	572 542 1439	30- 1	AE	DJ	N	C
DHAI-0100QSZZ	572 542 1441	20- 1	AG	DX	N	C
DHAI-0101QSZZ	572 542 1442	12- 44	AK	DX	N	C
DHAI-0105QSZZ	572 542 1444	12- 45	AW	FG	N	C
DHAI-0106QSZZ	572 542 1445	6- 24	AL	EB	N	C
DHAI-0108QSZZ	572 542 1447	6- 25	AK	DX	N	C
DHAI-0110QSZZ	572 542 1449	10- 3	AP	EQ	N	C
DHAI-0112QSZZ	572 542 1450	6- 8	AP	EQ	N	C
DHAI-0114QSZZ	572 542 1452	10- 5	AC	DJ	N	C
DHAI-0115QSZZ	572 542 1453	2- 21	AF	DS	N	C
DHAI-0116QSZZ	572 542 1454	2- 20	AC	DJ	N	C
"	572 542 1454	27- 1	AC	DJ	N	C
DHAI-0117QSZZ	572 542 1455	28- 1	AF	DS	N	C
DHAI-0120QSZZ	572 542 1456	4- 9	AG	DS	N	C
DHAI-0125QSZZ	572 542 1473	29- 1	AE	DS	N	C
DHAI-0133QSZZ	572 542 1462	25- 1	AH	DX	N	C
DHAI-0136QSZZ	572 542 1474	12- 18	AY	FQ	N	B
DHAI-0137QSZZ	572 542 1475	12- 18	AW	FG	N	B
DHAI-0139QSZZ	572 542 1490	12- 19	AG	DX	N	B
DHAI-0140QSZZ	572 542 1491	12- 50	AP	EQ	N	C
DHAI-0142QSZZ	572 542 1483	12- 18	AX	FG	N	B
DHAI-0143QSZZ	572 542 1484	12- 18	BA	FX	N	B
DHAI-0144QSZZ	572 542 1485	12- 18	AZ	FQ	N	B
DUNTK0041QS11	572 685 1815	6- 7	CC	TZ	N	E
DUNTK0041QSZZ	572 685 1814	6- 7	AU	EZ	N	E
DUNTK0049QSZZ	572 685 1816	12- 9	AU	EZ	N	E
DUNTK0050QS11	572 685 1818	12-501	CD	UB	N	E
DUNTK0050QS12	572 685 1819	12-501	CC	UB	N	E
DUNTK0050QSZZ	572 685 1817	12-501	BF	GN	N	E
DUNTK0088QSZZ	572 685 1822	12- 51	AU	EZ	N	E
DUNTW0037QS11	572 685 1824	9-901	BW	RR	N	E
DUNTW0037QS12	572 685 1825	9-901	BW	RR	N	E
DUNTW0037QSZZ	572 685 1823	9-901	BX	TF	N	E
DWIR-0466CSZZ	572 427 1070	15- 7	BG	HC		B
【G】						
GCAB-0013QSZA	572 107 1791	1- 18	BE	GN	N	D
GCAB-0013QSZZ	572 107 1763	1- 18	BC	GD	N	D
GCAB-0014QSZA	572 107 1792	1- 15	BA	FX	N	D
GCAB-0014QSZZ	572 107 1764	1- 15	AY	FQ	N	D
GCAB-0015QSZA	572 107 1793	1- 23	AX	FQ	N	D
GCAB-0015QSZZ	572 107 1765	1- 23	AV	FG	N	D
GCAB-0017QSZA	572 107 1789	2- 5	AW	FG	N	D
GCAB-0017QSZZ	572 107 1779	2- 5	AV	FG	N	D
GCASP0003QSZZ	572 108 1267	16- 18	AZ	FQ	N	D
GCOVH0010QSZZ	572 110 1079	1- 1	BE	GN	N	D
GCOVH0011QSZA	572 110 1104	1- 22	AQ	EQ	N	D
GCOVH0011QSZZ	572 110 1080	1- 22	AP	EQ	N	D
GCOVH0012QSZA	572 110 1101	12- 2	AT	EZ	N	C
GCOVH0012QSZZ	572 110 1094	12- 2	AS	EQ	N	C
GCOVH0014QSZA	572 110 1102	12- 1	AS	EQ	N	C
GCOVH0014QSZZ	572 110 1096	12- 1	AR	EQ	N	C
GCOVH0015QSZZ	572 110 1097	2- 1	AG	DX	N	D
GCOVH0016QSZZ	572 110 1098	2- 2	AH	DX	N	D
GCOVH0018QSZA	572 110 1103	14- 2	AR	EQ	N	C
GCOVH0018QSZZ	572 110 1099	14- 2	AQ	EQ	N	C
GCOVZ0023QSZZ	572 110 1107	17-102	BA	FX	N	D
GDAI-0002QSZZ	572 112 0146	11- 12	BH	GX	N	C
"	572 112 0146	12- 22	BH	GX	N	C



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			Ex.	Ja.		
GDÖR-0001QSZA	572 113 0044	3- 1	AW	FG	N	D
GDÖR-0001QSZZ	572 113 0043	3- 1	AW	FG	N	D
GFTA-0001QSZA	572 117 0096	1- 11	AX	FG	N	D
GFTA-0001QSZZ	572 117 0097	1- 11	AW	FG	N	D
GFTA-0002QSZZ	572 117 0098	1- 6	AD	DJ	N	D
GFTA-0005QSZZ	572 117 0094	11- 21	AC	DJ	N	C
GFTA-0007QSZZ	572 117 0095	11- 31	AE	DS	N	C
GLEGG0064FCZZ	572 123 0072	11- 41	AC	DJ		C
[H]						
HPNLH0004QSZ1	572 158 0605	2- 3	AV	FG	N	D
HPNLH0004QSZ2	572 158 0610	2- 3	AV	FG	N	D
HPNLH0004QSZ3	572 158 0611	2- 3	AV	FG	N	D
HPNLH0004QSZ4	572 158 0612	2- 3	AV	FG	N	D
HPNLH0004QSZ5	572 158 0613	2- 3	AV	FG	N	D
HPNLH0004QSZZ	572 158 0600	2- 3	AV	FG	N	D
HPNLH0006QSZ1	572 158 0606	2- 4	AM	EG	N	D
HPNLH0006QSZ2	572 158 0614	2- 4	AM	EG	N	D
HPNLH0006QSZZ	572 158 0601	2- 4	AM	EG	N	D
[J]						
JBTN-0018QSZZ	572 170 0446	2- 6	AE	DJ	N	C
JBTN-0020QSZZ	572 170 0448	2- 11	AC	DJ	N	C
JBTN-0023QSZZ	572 170 0452	2- 16	AG	DX	N	C
JBTN-0026QSZZ	572 170 0459	2- 13	AE	DJ	N	C
JBTN-0027QSZZ	572 170 0460	2- 15	AD	DJ	N	C
JBTN-0029QSZZ	572 170 0449	2- 7	AE	DS	N	C
JBTN-0030QSZZ	572 170 0461	2- 14	AD	DJ	N	C
JKNBZ0003QSZZ	572 174 0327	6- 41	AD	DJ	N	C
[L]						
LBNDJ0013FCZ1	572 201 0118	4- 15	AA	DJ		C
"	572 201 0118	4- 24	AA	DJ		C
LBNDJ0037FCZ1	572 201 0119	20- 2	AA	DJ		C
"	572 201 0119	21- 2	AA	DJ		C
"	572 201 0119	22- 2	AA	DJ		C
"	572 201 0119	23- 2	AA	DJ		C
"	572 201 0119	24- 2	AA	DJ		C
"	572 201 0119	30- 2	AA	DJ		C
LBNDJ2004SCZZ	541 201 1003	12- 20	AA	DD		C
LBÖSZ0048QSZZ	572 202 0415	14- 18	AD	DJ	N	C
LBÖSZ1031FCZZ	572 202 0270	11- 14	AC	DJ		C
LBÖSZ1508FCZZ	572 202 0378	6- 33	AG	DX		C
"	572 202 0378	13- 9	AG	DX		C
LBÖSZ1510FCZZ	572 202 0373	13- 5	AF	DX		C
LBSHZ0001QSZZ	572 204 0409	9- 8	AK	DX	N	C
LBSHZ0303FCZZ	572 204 0302	13- 10	AC	DJ		C
LDAiU0011QSZZ	572 210 1110	11- 33	AF	DS	N	C
LFiX-0005QSZZ	572 211 0677	4- 10	AC	DJ		C
LFiX-0007QSZZ	572 211 0693	7- 31	AE	DJ	N	C
LFiX-0007QSZZ	572 211 0692	7- 31	AE	DJ	N	C
LFiX-0284FCZZ	572 211 0176	5- 11	AC	DD		C
LFRM-0016QSZZ	572 213 1916	3- 10	AT	EZ	N	C
LFRM-0019QSZZ	572 213 1917	9- 40	AT	EZ	N	C
LFRM-0020QSZA	572 213 1922	13- 33	AX	FG	N	C
LFRM-0020QSZZ	572 213 1918	13- 33	AV	FG	N	C
LFRM-0022QSZZ	572 213 1890	12- 14	AP	EQ	N	C
LFRM-0023QSZZ	572 213 1891	12- 16	AQ	EQ	N	C
LFRM-0024QSZZ	572 213 1908	6- 46	BC	GD	N	C
LFRM-0025QSZZ	572 213 1892	12- 23	AM	EG	N	C
LFRM-0026QSZZ	572 213 1893	12- 25	AS	EZ	N	C
LFRM-0027QSZZ	572 213 1919	14- 39	AV	FG	N	C
LFRM-0032QSZZ	572 213 1894	12- 21	AN	EG	N	C
LHLDW0049QSZZ	572 214 1923	12- 42	AC	DJ	N	C
LHLDW1009ACZZ	541 214 5023	4- 14	AA	DD		C
LHLDW1226FCZZ	572 214 1450	16- 3	AB	DJ		C
"	572 214 1450	17- 10	AB	DJ		C
LHLDZ0001YSZZ	572 214 1908	8- 28	AD	DJ	N	C
LHLDZ0002YSZZ	572 214 1909	8- 26	AC	DJ	N	C
LHLDZ0013QSZZ	572 214 1869	5- 5	AD	DJ		C
LHLDZ0017QSZZ	572 214 1880	11- 29	AD	DJ		C
LHLDZ0030QSZZ	572 214 1910	15- 6	AD	DJ	N	C
LHLDZ0031QSZZ	572 214 1914	15- 13	AK	EB	N	C
LHLDZ0032QSZZ	572 214 1906	15- 10	AD	DJ	N	C
LHLDZ0033QSZZ	572 214 1911	3- 15	AF	DS	N	C
LHLDZ0034QSZZ	572 214 1897	9- 14	AF	DS	N	C
LHLDZ0038QSZZ	572 214 1917	6- 15	AH	DX	N	C
LHLDZ0039QSZZ	572 214 1912	6- 21	AE	DJ	N	C
LHLDZ0040QSZZ	572 214 1913	14- 16	AS	EQ	N	C
LHLDZ0043QSZZ	572 214 1898	4- 25	AE	DJ	N	C
LHLDZ0044QSZZ	572 214 1899	5- 1	AP	EQ	N	C
LHLDZ0045QSZZ	572 214 1907	7- 12	AD	DJ	N	C
LHLDZ1239FCZZ	572 214 1461	4- 4	AE	DS		C
LPiNS0258FCZZ	572 218 0329	14- 32	AA	DD		C

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			Ex.	Ja.		
LPiNS0301FCZZ	572 218 0426	6- 47	AD	DJ		C
LPLTM0001YSZZ	572 221 7078	8- 22	AN	EG	N	C
LPLTM0002YSZZ	572 221 7079	8- 21	AS	EQ	N	C
LPLTM00048QSZZ	572 221 7039	10- 11	AF	DS	N	C
LPLTM0050QSZZ	572 221 7040	9- 17	AM	EG	N	C
LPLTM0053QSZZ	572 221 7020	16- 1	AS	EQ	N	C
LPLTM0059QSZZ	572 221 7044	15- 4	AC	DJ	N	C
LPLTM0063QSZZ	572 221 7047	12- 38	AU	EZ	N	C
LPLTM0064QSZZ	572 221 7069	12- 40	AR	EQ	N	C
LPLTM0065QSZZ	572 221 7048	11- 6	AL	EB	N	C
LPLTM0066QSZZ	572 221 7049	11- 10	AF	DS	N	C
LPLTM0067QSZZ	572 221 7050	6- 22	AC	DJ	N	C
LPLTM0068QSZZ	572 221 7051	3- 12	AE	DJ	N	C
LPLTM0070QSZZ	572 221 7070	6- 43	AD	DJ	N	C
LPLTM0082QSZZ	572 221 7098	12- 12	AR	EQ	N	C
LPLTM0090QSZZ	572 221 7057	3- 8	AE	DS	N	C
LPLTM0091QSZZ	572 221 7058	3- 6	AE	DS	N	C
LPLTM0092QSZZ	572 221 7059	3- 4	AF	DS	N	C
LPLTM0099QSZZ	572 221 7060	12- 24	AK	DX	N	C
LPLTM0100QSZZ	572 221 7061	14- 14	AE	DJ	N	C
LPLTM0101QSZZ	572 221 7062	7- 11	AC	DJ	N	C
LPLTM2642FCZZ	572 221 2537	16- 4	AC	DJ		C
LPLTP0051QSZZ	572 221 7093	9- 23	AD	DJ	N	C
LPLTP0056QSZZ	572 221 7072	13- 3	AE	DJ	N	C
LPLTP0060QSZZ	572 221 7094	9- 41	AK	DX	N	C
LPLTZ0049QSZZ	572 221 7063	15- 15	AG	DS	N	C
LRALM0006QSZZ	572 223 0232	4- 47	AG	DS	N	C
LRALM0007QSZZ	572 223 0233	4- 27	AG	DX	N	C
LRALP0004QSZZ	572 223 0235	3- 2	AL	EB	N	C
LRALP0005QSZA	572 223 0237	11- 27	AQ	EQ	N	C
LRALP0005QSZZ	572 223 0234	11- 27	AN	EQ	N	C
LSÖU-0009QSZZ	572 226 0581	13- 45	AV	FG	N	D
LSÖU-0010QSZZ	572 226 0582	13- 48	AU	FG	N	D
LSÖU-0011QSZZ	572 226 0583	13- 47	AL	EB	N	D
LSÖU-0013QSZA	572 226 0592	12- 3	BB	GD	N	D
LSÖU-0013QSZZ	572 226 0593	12- 3	BB	FX	N	D
LSTPP0003QSZZ	572 230 0496	14- 54	AE	DJ	N	C
LSTPP0005QSZZ	572 230 0495	6- 20	AC	DJ	N	C
LSTPP0116FCZZ	572 230 0157	9- 7	AA	DD		C
LSTPP0161FCZZ	572 230 0062	16- 17	AB	DD		C
LX-BZ0004QSZZ	572 970 1917	4- 26	AB	DD		C
LX-BZ0013QSZ1	572 970 1962	9- 30	AC	DD	N	C
LX-BZ0015QSZZ	572 970 1957	17- 9	AF	DS	N	C
LX-BZ0049FCZZ	572 970 0353	4- 42	AB	DD		C
LX-BZ0324FCZZ	572 970 0197	4- 41	AA	DD		C
LX-BZ0335FCZZ	572 970 0245	5- 8	AA	DD		C
LX-RZ0001QSZZ	572 990 0487	7- 14	AB	DD	N	C
LX-WZ0002QSZZ	572 990 0486	10- 13	AB	DD	N	C
LX-WZ0119FCZZ	572 990 0002	4- 35	AA	DD		C
LX-WZ0313FCZZ	572 990 0227	9- 48	AA	DD		C
LX-WZ0314FCZZ	572 990 0230	10- 37	AA	DD		C
LX-WZ0329FCZZ	572 990 0410	7- 13	AB	DD		C
[M]						
MARMP0005QSZZ	572 240 0348	13- 51	AE	DJ	N	C
MARMP0006QSZZ	572 240 0354	13- 20	AD	DJ	N	C
MARMP0007QSZZ	572 240 0349	13- 19	AE	DJ	N	C
MARMP0008QSZZ	572 240 0350	13- 2	AH	DX	N	C
MARMP0009QSZZ	572 240 0351	13- 16	AF	DS	N	C
MCAMP0001QSZZ	572 241 0122	13- 22	AF	DS	N	C
MCAMP0002QSZZ	572 241 0121	14- 25	AE	DJ	N	C
MLEVP0017QSZZ	572 248 1154	9- 36	AF	DS	N	C
MLEVP0018QSZZ	572 248 1155	9- 33	AF	DS	N	C
MLEVP0019QSZZ	572 248 1139	9- 34	AD	DJ	N	C
MLEVP0020QSZZ	572 248 1140	9- 35	AD	DJ	N	C
MLEVP0021QSZZ	572 248 1137	11- 39	AD	DJ	N	C
MLEVP0022QSZZ	572 248 1150	11- 5	AE	DJ	N	C
MLEVP0023QSZZ	572 248 1141	11- 25	AE	DS	N	C
MLEVP0024QSZZ	572 248 1142	11- 32	AF	DS	N	C
MLEVP0025QSZZ	572 248 1151	14- 28	AD	DJ	N	C
MLEVP0026QSZZ	572 248 1156	9- 42	AG	DX	N	C
MLEVP0027QSZZ	572 248 1143	14- 26	AF	DS	N	C
MLEVP0028QSZZ	572 248 1144	14- 19	AF	DS	N	C
MLEVP0029QSZZ	572 248 1145	14- 27	AF	DS	N	C
MLEVP0044QSZZ	572 248 1160	11- 42	AE	DS	N	C
MLEVP0045QSZZ	572 248 1161	14- 48	AD	DJ	N	C
MSPRC0024QSZZ	572 258 3129	6- 4	AA	DJ		C
MSPRC0040QSZZ	572 258 3140	4- 28	AB	DJ		C
MSPRC0045QSZZ	572 258 3142	7- 26	AA	DJ		C
MSPRC0081QSZZ	572 258 3238	10- 34	AB	DJ	N	C
MSPRC0082QSZZ	572 258 3239	3- 16	AC	DJ	N	C
MSPRC0083QSZZ	572 258 3240	3- 14	AD	DJ	N	C



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			Ex.	Ja.		
MSPRC0084QSZZ	572 258 3241	3- 13	AD	DJ	N	C
MSPRC0085QSZZ	572 258 3242	3- 9	AE	DJ	N	C
MSPRC0090QSZZ	572 258 3243	16- 11	AD	DJ	N	C
MSPRC0099QSZZ	572 258 3244	11- 38	AC	DJ	N	C
MSPRC0101QSZZ	572 258 3245	11- 30	AB	DJ	N	C
MSPRC0105QSZZ	572 258 3246	6- 26	AB	DJ	N	C
MSPRC0106QSZZ	572 258 3247	6- 35	AF	DS	N	C
MSPRC1145FCZZ	572 258 1272	16- 16	AA	DD		C
MSPRC1152FCZZ	572 258 1329	11- 15	AE	DJ		C
MSPRC1315FCZ1	572 258 2131	13- 7	AD	DJ		C
MSPRC1316FCZ1	572 258 2132	13- 23	AE	DS		C
MSPRC1318FCZ1	572 258 2134	10- 9	AA	DJ		C
"	572 258 2134	13- 29	AA	DJ		C
MSPRC1873FCZ1	572 258 2216	16- 15	AB	DJ		C
MSPRC2132FCZ1	572 258 2195	10- 23	AA	DJ		C
MSPRC2175FCZZ	572 258 2170	13- 32	AA	DJ		C
MSPRD0092QSZZ	572 258 3287	13- 26	AE	DJ	N	C
MSPRD0102QSZZ	572 258 3250	6- 14	AC	DJ	N	C
MSPRD0103QSZZ	572 258 3251	6- 13	AC	DJ	N	C
MSPRD0104QSZZ	572 258 3252	6- 12	AC	DJ	N	C
MSPRD0117QSZZ	572 258 3253	9- 43	AB	DJ	N	C
MSPRD0118QSZZ	572 258 3254	9- 44	AB	DJ	N	C
MSPRD0139QSZZ	572 258 3262	6- 30	AB	DJ	N	C
MSPRD0143QSZZ	572 258 3264	14- 30	AF	DS	N	C
MSPRD0144QSZZ	572 258 3265	14- 52	AC	DJ	N	C
MSPRK0001YSZZ	572 258 3266	8- 27	AB	DJ	N	C
MSPRP0087QSZZ	572 258 3267	9- 31	AC	DJ	N	C
MSPRT0086QSZZ	572 258 3274	9- 18	AB	DJ	N	C
MSPRT0089QSZZ	572 258 3275	9- 32	AC	DJ	N	C
MSPRT0091QSZZ	572 258 3276	13- 12	AC	DJ	N	C
MSPRT0100QSZZ	572 258 3277	11- 4	AB	DJ	N	C
MSPRT0107QSZZ	572 258 3278	14- 55	AC	DJ	N	C
MSPRT0147QSZZ	572 258 3301	13- 36	AC	DJ	N	C
MSPRT0229GCAZ	578 258 0416	14- 7	AC	DJ		C
MSPRT0513FCZ1	572 258 2240	15- 8	AA	DJ		C
[N]						
NBLTT0002QSZZ	572 271 0583	4- 37	AH	DX		B
NBLTT0007QSZZ	572 271 0603	12- 36	AH	DX	N	B
NBRGC0008YSZZ	572 272 0675	8- 12	AH	DX	N	C
NBRGC0047FCZZ	572 272 0665	6- 38	AD	DJ		C
NBRGC0133FCZ1	572 272 0470	4- 46	AC	DJ		C
NBRGC0387FCZ1	572 272 0471	4- 39	AC	DJ		C
"	572 272 0471	8- 18	AC	DJ		C
NBRGC0529FCZZ	572 272 0498	12- 31	AD	DJ		C
"	572 272 0498	14- 13	AD	DJ		C
"	572 272 0498	14- 23	AD	DJ		C
NBRGM0008QSZZ	572 272 0676	14- 33	AE	DJ	N	C
NBRGP0007QSZZ	572 272 0677	11- 19	AD	DJ	N	C
NBRGP0260FCZ1	572 272 0433	9- 28	AD	DS		C
NBRGP0299FCZZ	572 272 0013	7- 18	AC	DJ		C
NBRGY2122SCZZ	595 272 0047	14- 15	AB	DD		B
"	595 272 0047	14- 37	AB	DD		B
NCPL-0002QSZZ	572 274 0043	6- 3	AC	DJ		C
NCPL-0003QSZZ	572 274 0044	7- 9	AC	DJ		C
NCPL-0004FCZZ	572 274 0003	10- 24	AB	DD		C
NFANP0002QSZZ	572 277 0083	14- 43	AY	FQ	N	B
NFANP0003QSZZ	572 277 0084	12- 6	AY	FQ	N	B
NGERH0001YSZZ	572 281 1818	8- 15	AD	DJ	N	C
NGERH0002YSZZ	572 281 1819	8- 13	AD	DJ	N	C
NGERH0007QSZZ	572 281 1748	10- 26	AH	DX		C
NGERH0008QSZ1	572 281 1749	10- 28	AL	EB		C
NGERH0009QSZZ	572 281 1750	10- 20	AD	DJ		C
NGERH0010QSZZ	572 281 1751	10- 19	AD	DJ		C
NGERH0011QSZZ	572 281 1752	10- 22	AD	DJ		C
NGERH0012QSZZ	572 281 1753	10- 30	AE	DS		C
NGERH0013QSZZ	572 281 1754	10- 32	AG	DX		C
NGERH0014QSZZ	572 281 1755	10- 21	AD	DJ		C
NGERH0016QSZZ	572 281 1757	10- 33	AD	DJ		C
NGERH0027QSZZ	572 281 1766	4- 34	AH	DX		C
NGERH0028QSZZ	572 281 1767	8- 17	AD	DJ		C
NGERH0034QSZ1	572 281 1832	7- 34	AC	DJ	N	C
NGERH0035QSZ1	572 281 1833	7- 33	AC	DJ	N	C
NGERH0036QSZZ	572 281 1773	7- 28	AC	DJ		C
NGERH0037QSZZ	572 281 1774	7- 30	AC	DJ		C
NGERH0038QSZZ	572 281 1775	7- 29	AC	DJ		C
NGERH0039QSZZ	572 281 1776	7- 25	AE	DS		C
NGERH0052QSZZ	572 281 1823	10- 25	AE	DJ	N	C
NGERH0053QSZZ	572 281 1824	10- 14	AD	DJ	N	C
NGERH0054QSZZ	572 281 1825	10- 38	AD	DJ	N	C
NGERH0055QSZZ	572 281 1826	10- 35	AE	DJ	N	C
NGERH0056QSZZ	572 281 1827	10- 36	AE	DJ	N	C

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			Ex.	Ja.		
NGERH0057QSZZ	572 281 1828	10- 27	AE	DJ	N	C
NGERH0058QSZZ	572 281 1829	10- 31	AF	DS	N	C
NGERH0059QSZZ	572 281 1830	10- 29	AD	DJ	N	C
NGERH0060QSZZ	572 281 1809	11- 17	AH	DX	N	C
NGERH0061QSZZ	572 281 1810	13- 15	AD	DJ	N	C
NGERH0062QSZZ	572 281 1831	6- 37	AK	DX	N	C
NGERH0063QSZZ	572 281 1811	14- 31	AD	DJ	N	C
NGERH0067QSZZ	572 281 1812	14- 56	AD	DJ	N	C
NGERH0068QSZZ	572 281 1813	14- 57	AD	DJ	N	C
NGERH0070QSZZ	572 281 1814	14- 35	AC	DJ	N	C
NGERH0071QSZZ	572 281 1815	12- 34	AF	DS	N	C
NGERH0076QSZZ	572 281 1816	14- 21	AD	DJ	N	C
NGERH0193FCZZ	572 281 0318	13- 46	AB	DD		C
"	572 281 0318	16- 14	AB	DD		C
NGERH0495FCZZ	572 281 0665	13- 14	AC	DD		C
NGERH0540FCZ1	572 281 1277	9- 13	AE	DJ		C
NGERH0972FCZZ	572 281 1108	13- 27	AB	DJ		C
NKOM-0001QSZZ	572 273 0019	6- 29	AD	DJ	N	C
NKOM-0002QSZZ	572 273 0020	14- 9	AC	DJ	N	C
NPLYZ0003QSZZ	572 284 0698	4- 43	AM	EG		C
NPLYZ0004QSZZ	572 284 0699	4- 40	AG	DX		C
NPLYZ0005QSZZ	572 284 0700	4- 18	AG	DX	N	C
NPLYZ0006QSZZ	572 284 0701	4- 19	AD	DJ	N	C
NPLYZ0007QSZZ	572 284 0702	5- 4	AG	DX		C
NPLYZ0009QSZZ	572 284 0716	12- 33	AD	DJ	N	C
NRÖL i 0030QSZZ	572 287 1890	9- 11	BC	GJ	N	C
NRÖLM0001YSZZ	572 287 1891	8- 10	AP	EQ	N	C
NRÖLM0002YSZZ	572 287 1906	8- 20	BA	FX	N	C
NRÖLM0037QSZZ	572 287 1907	14- 6	AR	EQ	N	C
NRÖLP0032QSZZ	572 287 1898	6- 40	AT	EZ	N	C
NRÖLP0033QSZZ	572 287 1899	14- 6	AR	EQ	N	C
NRÖLP0034QSZZ	572 287 1908	14- 8	AD	DJ	N	C
NRÖLP0038QSZZ	572 287 1900	14- 38	AP	EQ	N	C
NRÖLP1122FCZZ	572 287 1526	14- 46	AF	DS		C
NRÖLR0031QSZZ	572 287 1903	9- 27	BC	GJ	N	C
NRÖLR0922FCZZ	572 287 1120	13- 13	AR	EZ		C
NSFTZ0016QSZZ	572 290 2469	9- 26	AH	DX	N	C
NSFTZ0017QSZZ	572 290 2470	13- 21	AG	DS	N	C
NSFTZ0018QSZZ	572 290 2471	13- 11	AL	EB	N	C
NSFTZ0019QSZZ	572 290 2472	7- 22	AE	DJ	N	C
NSFTZ0020QSZZ	572 290 2473	7- 19	AL	EB	N	C
NSFTZ0021QSZZ	572 290 2474	6- 28	AK	EB	N	C
NSFTZ0025QSZZ	572 290 2475	14- 24	AQ	EQ	N	C
NSFTZ0028QSZZ	572 290 2476	4- 44	AM	EG	N	C
[P]						
PBOX-0001YSZZ	572 307 0405	8- 11	AN	EQ	N	D
PBRSR0005QSZZ	572 310 0315	14- 11	AK	EB	N	B
PCAPH0001YSZZ	572 312 0054	8- 16	AD	DJ	N	C
PCAPH0004YSZZ	572 312 0055	8- 3	AC	DJ	N	C
PCAPH0005YSZZ	572 312 0056	8- 2	AD	DJ	N	C
PCAPH0009QSZZ	572 312 0053	7- 21	AC	DJ	N	C
PCAPH0011QSZZ	572 312 0059	1- 29	AC	DJ	N	C
PCASZ0006QSZZ	572 315 0193	15- 12	AM	EG	N	C
PCASZ0008QSZZ	572 315 0195	4- 7	AM	EG	N	C
PCÖVP0001YSZZ	572 323 1914	8- 30	AE	DJ	N	C
PCÖVP0018QSZZ	572 323 1887	7- 32	AG	DS		C
PCÖVP0029QSZZ	572 323 1922	9- 5	AX	FG	N	C
PCÖVP0030QSZA	572 323 1938	13- 1	AM	EG	N	C
PCÖVP0030QSZZ	572 323 1913	13- 1	AN	EG	N	C
PCÖVP0032QSZZ	572 323 1916	11- 37	AE	DJ	N	C
PCÖVP0033QSZZ	572 323 1923	11- 26	AF	DS	N	C
PCUSG0190FCZ1	572 326 0236	4- 21	AB	DJ		C
PCUSS0009QSZZ	572 326 0377	5- 10	AA	DJ		C
PCUSS0201FCZZ	572 326 0103	5- 14	AA	DD		C
PDUC-0003QSZZ	572 332 0194	14- 44	AK	DX	N	C
PF i LZ0004QSZZ	572 337 0363	14- 40	AM	EG	N	B
PG i DH0031QSZZ	572 345 3201	15- 2	AH	DX	N	C
PG i DH0033QSZZ	572 345 3202	9- 25	AL	EB	N	C
PG i DH0041QSZZ	572 345 3203	3- 17	AL	EB	N	C
PG i DM0030QSZZ	572 345 3238	10- 1	AL	EB	N	C
PG i DM0032QSZZ	572 345 3239	15- 16	AE	DS	N	C
PG i DM0034QSZZ	572 345 3240	9- 20	AP	EQ	N	C
PG i DM0035QSZZ	572 345 3213	16- 5	AP	EQ	N	C
PG i DM0036QSZZ	572 345 3214	16- 9	AP	EQ	N	C
PG i DM0037QSZZ	572 345 3215	13- 41	AG	DS	N	C
PG i DM0038QSZZ	572 345 3216	13- 42	AG	DS	N	C
PG i DM0039QSZZ	572 345 3241	14- 45	AS	EQ	N	C
PG i DM0040QSZZ	572 345 3230	14- 47	AQ	EQ	N	C
PG i DM0054QSZZ	572 345 3220	1- 19	AG	DX	N	C
PG i DM0055QSZZ	572 345 3221	1- 21	AG	DX	N	C
PGLSP0003QSZZ	572 348 0134	1- 8	BA	FX	N	B



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			Ex.	Ja.		
PGUMS0002QSZZ	572 352 0307	4- 33	AL	EB	N	C
PMiR-0008QSZZ	572 374 0198	5- 12	AP	EQ	N	B
PMLT-0002YSZZ	572 375 0890	8- 7	AC	DJ	N	C
PMLT-0005YSZZ	572 375 0893	8- 8	AB	DJ	N	C
PMLT-0006YSZZ	572 375 0894	8- 9	AB	DJ	N	C
PMLT-0015QSZZ	572 375 0877	7- 4	AA	DJ		C
PMLT-0017QSZZ	572 375 0879	7- 17	AC	DJ		C
PMLT-0018QSZZ	572 375 0882	7- 20	AC	DJ		C
PMLT-0023QSZZ	572 375 0896	7- 7	AE	DJ	N	C
PMLT-0027QSZZ	572 375 0897	14- 41	AC	DJ	N	C
PMLT-0686FCZZ	572 375 0483	8- 19	AA	DD		C
PPiPP0005QSZZ	572 395 0210	7- 24	AM	EG	N	C
PPiPP0006QSZZ	572 395 0211	11- 16	AD	DJ	N	C
PPiPP0009FCZZ	572 395 0086	13- 24	AD	DJ	N	C
PPiPP0109FCZZ	572 395 0039	13- 6	AB	DD		C
PPiPP0174FCZZ	572 395 0168	6- 34	AC	DJ		C
PSEL-0021QSZZ	572 400 0693	7- 6	AF	DS		C
PSEL-0022QSZZ	572 400 0694	7- 5	AF	DS		C
PSHEA0004YSZZ	572 403 4379	8- 31	AC	DJ	N	C
PSHEP0050QSZZ	572 403 4385	15- 3	AC	DJ	N	C
PSHEP0051QSZZ	572 403 4386	15- 5	AB	DJ	N	C
PSHEP0052QSZZ	572 403 4387	15- 9	AB	DJ	N	C
PSHEP0053QSZZ	572 403 4409	9- 24	AK	DX	N	C
PSHEP0085QSZZ	572 403 4439	4- 51	AC	DJ	N	C
PSHEP0090QSZZ	572 403 4440	4- 49	AD	DJ	N	C
"	572 403 4440	12- 41	AD	DJ	N	C
PSHEP0091QSZZ	572 403 4441	4- 50	AD	DJ	N	C
PSHEZ0054QSZZ	572 403 4391	16- 2	AC	DJ	N	C
PSHEZ0056QSZZ	572 403 4449	6- 49	AC	DJ	N	C
PSHEZ0058QSZZ	572 403 4392	1- 2	AY	FQ	N	C
PSHEZ0059QSZZ	572 403 4393	1- 9	AF	DS	N	C
PSHEZ0088QSZZ	572 403 4442	1- 27	AF	DS	N	C
PSHEZ0089QSZZ	572 403 4443	1- 28	AF	DS	N	C
PSHEZ0099QSZZ	572 403 4444	13- 35	AC	DJ	N	C
PSHEZ0100QSZZ	572 403 4445	13- 37	AC	DJ	N	C
PSHEZ0105QSZZ	572 403 4446	9- 46	AC	DJ	N	C
PSHEZ0108QSZZ	572 403 4447	4- 52	AC	DJ	N	C
PSHEZ0109QSZZ	572 403 4448	4- 53	AC	DJ	N	C
PSHEZ0121QSZZ	572 403 4450	9- 47	AG	DS	N	C
PSHEZ2026FCZZ	572 403 1992	11- 28	AB	DD		C
PSHEZ2174FCZZ	572 403 2095	11- 23	AB	DD		C
PSHT-0004QSZZ	572 407 0097	7- 27	AC	DJ		C
PSPAZ0011QSZZ	572 413 0682	5- 15	AD	DJ	N	C
PSPAZ0696FCZZ	572 413 0605	7- 23	AC	DJ		C
PTME-0003QSZZ	572 420 0302	10- 8	AD	DJ	N	C
PTME-0007GCZA	572 420 0030	9- 19	AG	DS		C
PTME-0012QSZZ	572 420 0304	10- 15	AC	DJ	N	C
PTME-0013QSZZ	572 420 0307	11- 3	AL	EB	N	C
PTME-0178FCZZ	572 420 0181	13- 31	AC	DD		C
PTME-0179FCZZ	572 420 0182	13- 30	AC	DD		C
PTME-0255FCZZ	572 420 0271	16- 6	AG	DS		C
PTME-0256FCZZ	572 420 0272	16- 10	AG	DS		C
PTPE-0006QSZZ	572 423 0216	7- 15	AC	DJ	N	C
PWiR-0005QSZZ	572 427 1635	4- 1	AS	EQ	N	C
[Q]						
QCNCM0016QSZZ	572 510 1057	18- 1	AL	EB	N	C
QCNCM0017QSZZ	572 510 1051	18- 2	AC	DJ	N	C
QCNCM0019QSZZ	572 510 1052	18- 3	AB	DJ	N	C
QCNCM0029QSZZ	572 510 1071	25- 2	AK	DX	N	C
QCNCM0030QSZZ	572 510 1064	18- 4	AL	EB		C
QCNCM0672FCZZ	595 510 0041	29- 2	AB	DD		C
QCNCM0846FCZZ	572 510 0697	18- 5	AF	DS		C
QCNCM0877FCZZ	572 510 0842	18- 6	AF	DS		C
QCNCM0923FCZZ	572 510 0869	18- 7	AF	DS		C
QCNCM0923FC24	572 510 0870	18- 8	AF	DS		C
QCNCM1005MCZZ	589 510 0004	18- 9	AB	DD		C
QCNCM1006MCZZ	589 510 0020	18- 10	AB	DD		C
QCNCM1119LC0C	572 510 1049	18- 11	AC	DJ	N	C
QCNCM1119LC0D	572 510 1055	18- 12	AC	DJ	N	C
"	572 510 1055	29- 3	AC	DJ	N	C
QCNCM2401SC0C	595 510 0762	18- 13	AB	DJ		C
QCNCM2401SC0D	595 510 0090	18- 14	AC	DJ		C
QCNCM2401SC0E	578 510 0195	18- 15	AC	DJ		C
QCNCM2401SC0F	595 510 0782	28- 2	AB	DJ		C
QCNCM7014SC0B	595 510 0337	18- 16	AD	DJ		C
QCNCM7014SC0C	595 510 0338	18- 17	AA	DD		C
"	595 510 0338	28- 3	AA	DD		C
QCNCM7014SC0D	595 510 0345	18- 18	AB	DD		C
QCNCM7014SC0E	595 510 0744	18- 19	AB	DJ		C
QCNCM7014SC0F	595 510 0346	18- 20	AB	DD		C
"	595 510 0346	28- 4	AB	DD		C

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			Ex.	Ja.		
QCNCM7014SC0G	595 510 0347	18- 21	AB	DD		C
QCNCM7014SC1A	595 510 0692	18- 22	AC	DJ		C
QCNCM7014SC1B	595 510 0352	18- 23	AD	DJ		C
QCNCM7014SC1J	588 510 0153	18- 24	AC	DD		C
QCNCP0240QCZZ	572 510 0731	18- 25	AA	DJ		C
QCNCP0242QCZZ	572 510 0733	18- 26	AA	DJ		C
QCNCP0341QCZZ	572 510 0922	18- 27	AC	DJ		C
QCNCW0015QSZZ	572 510 1031	18- 28	AE	DJ		C
QCNCW0020QSZZ	572 510 1058	19- 1	AG	DS	N	C
QCNCW0021QSZZ	572 510 1059	19- 2	AF	DS	N	C
"	572 510 1059	27- 2	AF	DS	N	C
QCNCW0022QSZZ	572 510 1060	19- 3	AE	DJ	N	C
QCNCW0023QSZZ	572 510 1061	19- 4	AE	DS	N	C
QCNCW0024QSZZ	572 510 1056	18- 29	AF	DS		C
QCNCW0690FCZZ	572 510 0090	29- 4	AB	DD		C
QCNCW0843FCZZ	572 510 0712	29- 5	AC	DJ		C
QCNCW0885FCZZ	572 510 0834	18- 30	AG	DX		C
QCNCW0948FCZZ	572 510 0923	18- 32	AC	DJ		C
QCNCW1124LC0D	572 510 1032	18- 33	AB	DJ		C
QCNCW1124LC0H	594 510 0507	18- 34	AC	DJ		C
QCNCW1124LC1F	594 510 0473	18- 35	AC	DJ		C
"	594 510 0473	28- 5	AC	DJ		C
QFS-A3089KCZZ	502 515 0003	29- 6	AC	DD		A
QF5HB0001GCZZ	578 516 0006	29- 7	AB	DJ		C
QSLP-0008QSZZ	572 537 0043	15- 14	AD	DJ	N	C
QSLP-0009QSZZ	572 537 0044	15- 11	AD	DJ	N	C
QSOCZ6408ACZZ	578 527 0004	18- 36	AB	DD		C
QSW-B0003QSZZ	572 530 0667	6- 44	AF	DS		B
"	572 530 0667	11- 1	AF	DS		B
QSW-P0008QSZZ	572 530 0679	19- 5	AC	DJ	N	B
"	572 530 0679	27- 3	AC	DJ	N	B
QTANN0015FCZZ	572 532 0016	12- 49	AG	DS		C
[R]						
RCRMZ0001QSZZ	572 616 0105	19- 6	AE	DS	N	B
RCRSZ0001QSZZ	572 616 0100	18- 38	AG	DS		B
RCRSZ0003QSZZ	572 616 0098	18- 39	AP	EQ		B
RCRSZ0004QSZZ	572 616 0103	18- 40	AP	EQ	N	B
RCRSZ0005QSZZ	572 616 0104	19- 7	AF	DS	N	B
RDEN-0001QSZZ	572 685 1806	12- 11	BK	HG	N	E
RDEN-0002QS11	572 685 1808	12- 8	BX	RR	N	E
"	572 685 1808	26-901	BX	RR	N	E
RDEN-0002QS12	572 685 1809	12- 8	BY	TF	N	E
"	572 685 1809	26-901	BY	TF	N	E
RDEN-0002QSZZ	572 685 1807	12- 8	BX	TF	N	E
"	572 685 1807	26-901	BX	TF	N	E
RDTCM0001YSZZ	572 618 0136	8- 25	AZ	FQ	N	B
RDTC0005QSZZ	572 618 0139	9- 16	AN	EQ	N	B
RFILN0019GCZZ	578 621 0026	18-117	AC	DJ		B
RHET-0003QSZZ	572 623 0077	4- 12	AP	EQ	N	B
RHET-0004QSZZ	572 623 0079	11- 36	AP	EQ	N	B
RLMPU0005QSZZ	572 626 0580	9- 6	BA	FX	N	B
RLMPU0006QSZZ	572 626 0581	9- 6	BA	FX	N	B
RLMPU0007QSZZ	572 626 0582	9- 6	BA	FX	N	B
RMOTD0016QSZZ	572 630 0966	6- 5	AY	FQ	N	B
RMOTP0014QSZZ	572 630 0965	10- 7	BH	GX	N	B
RMOTP0018QSZZ	572 630 0968	14- 59	AV	FG	N	B
RMOTP0021QSZZ	572 630 0970	4- 30	BB	GD	N	B
RMPTW4000QCJ J	594 631 0096	18- 41	AB	DD		B
RMPTW4103QCJ J	571 631 0147	18- 42	AB	DD		B
RMPTW4203QCJ J	572 631 0262	18- 43	AA	DD		B
RMPTW4222QCJ J	572 631 0254	18- 44	AB	DD		B
RMPTW4330QCJ J	567 631 0058	18- 45	AB	DD		B
RPLU-0007QSZZ	572 647 0330	13- 28	AN	EG	N	B
RPLU-0008QSZZ	572 647 0331	10- 16	AN	EG	N	B
RPLU-0009QSZZ	572 647 0332	10- 10	AN	EG	N	B
RRLYD3222QCZZ	572 637 0139	29- 8	AL	EB		B
[S]						
SPAKA0083QSZZ	572 902 1460	17- 4	AX	FG	N	D
SPAKA0130QSZZ	572 902 1482	17- 16	BA	FX	N	D
SPAKA0131QSZZ	572 902 1483	17- 3	AT	EZ	N	D
SPAKA0132QSZZ	572 902 1472	17- 2	AR	EQ	N	D
SPAKA0133QSZZ	572 902 1473	17- 14	AG	DS	N	D
SPAKA0134QSZZ	572 902 1474	17- 7	AE	DJ	N	D
SPAKA0150QSZZ	572 902 1485	17- 17	AF	DS	N	D
SPAKC0091QS11	572 901 1500	17- 1	AY	FQ	N	D
SPAKC0091QSZZ	572 901 1468	17- 1	AY	FQ	N	D
SPAKC0100QS12	572 901 1501	17- 1	AY	FQ	N	D
SPAKC0100QS13	572 901 1532	17- 1	AY	FQ	N	D
SPAKC0100QS14	572 901 1533	17- 1	AY	FQ	N	D
SPAKC0100QS15	572 901 1534	17- 1	AY	FQ	N	D
SPAKC0135QSZZ	572 901 1535	17- 1	AY	FQ	N	D



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			Ex.	Ja.		
SSAKA2343QCZZ	595 906 0012	17- 19	AA	DD		D
SSAKH9982QCZZ	572 906 0014	17- 5	AF	DS		D
【T】						
TCADZ0010QSZZ	572 913 0821	17- 8	AC	DJ		D
TCAUA0770FCZZ	572 914 0035	1- 32	AB	DD		C
TCAUH0007QSZZ	572 914 0676	6- 48	AD	DJ		C
TCAUH0819FCZZ	572 914 0575	3- 19	AA	DD		C
TINSE0115QSZZ	572 916 1577	17- 18	AS	EQ	N	D
TINSE0116QSZZ	572 916 1579	17- 18	AS	EQ	N	D
TINSF0117QSZZ	572 916 1580	17- 18	BA	FX	N	D
TINSG0118QSZZ	572 916 1581	17- 18	BB	GD	N	D
TINSI0120QSZZ	572 916 1582	17- 18	AT	EZ	N	D
TINSJ0114QSZZ	572 916 1578	17- 18	AX	ZZ	N	D
TINSS0119QSZZ	572 916 1583	17- 18	AY	FQ	N	D
TINSZ0121QSZZ	572 916 1584	17- 18	AY	FQ	N	D
TINSZ0122QSZZ	572 916 1585	17- 18	AY	FQ	N	D
TLABH0061QSZZ	572 917 3359	9- 39	AE	DJ	N	C
TLABH0062QSZZ	572 917 3360	9- 39	AE	DJ	N	C
TLABH0064QSZZ	572 917 3369	16- 8	AC	DJ	N	C
TLABH0065QSZZ	572 917 3371	17- 13	AN	EG	N	C
TLABH0066QSZZ	572 917 3370	13- 44	AE	DJ	N	C
TLABH0068QSZZ	572 917 3373	17-101	AF	DS	N	C
TLABH0069QSZZ	572 917 3372	17- 13	AN	EG	N	C
TLABH0078QSZZ	572 917 3374	17-101	AF	DS	N	C
TLABH0103QSZZ	572 917 3375	1- 30	AE	DS	N	C
TLABH0104QSZZ	572 917 3376	1- 31	AE	DS	N	C
TLABH0107QSZZ	572 917 3377	1- 35	AG	DX	N	C
TLABH0108QSZZ	572 917 3378	1- 35	AG	DX	N	C
TLABH0264GCZZ	578 917 0363	1- 33	AC	DJ		C
TLABZ0058QSZZ	572 917 3341	1- 34	AD	DJ		C
TLABZ1721FCZZ	572 917 1857	8- 5	AA	DD		C
TTAG-0004QSZZ	572 921 0003	16- 19	AC	DJ	N	D
"	572 921 0003	17- 11	AC	DJ	N	D
【U】						
UBAGF0018YSZ1	572 931 0023	17- 6	AF	DS	N	D
UCLEZ0009QSZZ	572 704 0074	7- 3	AV	FG	N	C
UCLEZ0010QSZZ	572 704 0075	7- 16	AR	EQ	N	C
【V】						
VCCCCY1HH101J	507 591 5030	18- 49	AA	DD		C
VCCCCY1HH120J	594 593 0047	18- 47	AA	DD		C
VCCCCY1HH150J	594 593 0048	19- 8	AB	DD		C
VCCCCY1HH180J	594 593 0183	18- 48	AA	DD		C
VCCCCY1HH300J	594 593 0051	19- 9	AB	DD		C
VCCUCY1AJ105Z	596 593 0899	18- 50	AC	DD		C
"	596 593 0899	19- 13	AC	DD		C
VCEAGA1VW106M	572 594 0093	18- 56	AA	DD		C
VCEAGU1CW106M	571 594 0095	18- 51	AA	DD		C
VCEAGU1CW107M	541 591 5286	18- 52	AB	DD		C
VCEAGU1CW226M	541 591 5060	18- 53	AA	DD		C
VCEAGU1CW476M	541 591 5063	18- 54	AB	DD		C
VCEAGU1HW107M	505 591 5012	18- 55	AC	DD		C
VCEAGU1VW476M	579 594 0046	18- 57	AB	DD		C
"	579 594 0046	28- 6	AB	DD		C
VCEAJU1CW476M	596 594 0062	19- 10	AB	DD		C
VCKYCY1EB223K	595 593 1253	18- 58	AA	DD		C
VCKYCY1EF104Z	507 591 5036	18- 59	AA	DD		C
VCKYCY1HB102K	594 593 0044	18- 60	AA	DD	N	C
"	594 593 0044	19- 11	AA	DD	N	C
VCKYCY1HB222K	595 593 0027	18- 61	AA	DD		C
VCKYCY1HB471K	571 593 0179	18- 62	AB	DD		C
VCKYCY1HF103Z	594 593 0071	19- 12	AA	DD		C
VCKYCY1HF223Z	594 593 0072	19- 14	AA	DD		C
VCKYPU1HB102K	541 595 1004	20- 3	AA	DD		C
"	541 595 1004	21- 3	AA	DD		C
"	541 595 1004	22- 3	AA	DD		C
"	541 595 1004	23- 3	AA	DD		C
"	541 595 1004	24- 3	AA	DD		C
"	541 595 1004	28- 7	AA	DD		C
"	541 595 1004	30- 3	AA	DD		C
VHD1N4005E/-1	572 570 0480	18-116	AB	DJ		B
VHDDSS133/-1	500 570 5006	18- 63	AA	DD		B
"	500 570 5006	19- 15	AA	DD		B
"	500 570 5006	29- 9	AA	DD		B
VHERD20EB3/-1	571 571 0169	18- 64	AB	DD		B
VHEUDZS5.6B-1	594 571 0179	18- 65	AC	DJ		B
VHi16163CLT-6	572 573 1771	18-115	BA	FX	N	B
VHi29F400BCA1	572 573 1860	18- 81	BA	FX	N	B
VHi29F400BCB1	572 573 1861	18- 81	BA	FX	N	B
VHi65808GN146	572 573 1853	18- 82	BF	GN	N	B
VHi74HCT244MF	596 573 0869	18- 83	AH	DX		B
VHi74LS244NS1	596 573 0691	18- 84	AH	DX		B

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			Ex.	Ja.		
VHi74VHC08/-1	572 573 1476	18- 85	AE	DS		B
VHiH8/3643/-1	572 573 1820	19- 16	AU	EZ	N	B
VHiH8S/2350FP	572 573 1768	18- 67	AY	FQ		B
VHiHG73C025FD	572 573 1767	18- 66	BE	GN		B
VHiLM358PS/-S	572 573 0399	18- 68	AC	DJ		B
VHiM24C04BN6/-	572 573 1852	18- 70	AG	DX	N	B
VHiM51953BL-1	588 573 0032	18- 71	AF	DS		B
VHiM6236FP-1	572 573 1791	18- 72	AT	EZ		B
VHiMC7805CT-2	572 573 1080	18- 69	AE	DS		B
VHiNJM2903M/-	572 573 0025	18- 73	AD	DJ		B
VHiNJM3414M-1	571 573 1448	18- 74	AF	DX		B
VHiSC65165V6T	596 573 2808	18-114	BW	RR	N	B
VHiSLA7027MUL	578 573 0932	18- 75	AQ	EQ		B
VHiSTA401A/-1	572 576 0006	18- 76	AP	EQ		B
"	572 576 0006	28- 8	AP	EQ		B
VHiTA7291S/-1	572 573 0188	18- 77	AF	DS		B
VHiTB62706AN/-	572 573 1825	19- 17	AS	EQ	N	B
VHiTC74ACT32F	567 573 1044	18- 86	AF	DS		B
VHiTD62503F/-	572 573 0907	18- 78	AG	DX		B
VHiTD62785F//	572 573 1821	19- 18	AN	EQ	N	B
VHiULN2003AN1	572 573 0829	18- 79	AE	DJ		B
VHiW24258A12J	572 573 1880	18- 80	AN	EG	N	B
VHPGP1S53V/-1	578 574 0031	20- 4	AE	DS		B
"	578 574 0031	21- 4	AE	DS		B
"	578 574 0031	22- 4	AE	DS		B
"	578 574 0031	23- 4	AE	DS		B
"	578 574 0031	24- 4	AE	DS		B
"	578 574 0031	28- 9	AE	DS		B
"	578 574 0031	30- 4	AE	DS		B
VHPLTC3650G01	572 574 0314	19- 19	AQ	EQ		B
VHPMPG3864K-J	572 574 0298	19- 20	AC	DJ		B
"	572 574 0298	27- 4	AC	DJ		B
VHPMVR3864K-J	572 574 0299	19- 21	AC	DJ		B
VHVICPN38//1	585 577 0022	18- 87	AF	DS		B
"	585 577 0022	28- 10	AF	DS		B
VRD-HT2EY103J	505 581 5044	18-119	AA	DD		C
VRD-HT2EY151J	541 581 5470	28- 11	AA	DD		C
VRD-HT2EY222J	590 581 0041	28- 12	AA	DD		C
VRD-RC2EY161J	572 580 0612	19- 22	AA	DD		C
VRS-CY1JD000J	507 581 5050	18- 88	AA	DD		C
"	507 581 5050	19- 23	AA	DD		C
VRS-CY1JD100J	596 581 0256	18- 89	AA	DD		C
VRS-CY1JD101J	596 581 0257	18- 90	AA	DD		C
VRS-CY1JD102J	571 581 0007	18- 91	AA	DD		C
VRS-CY1JD103F	521 581 0049	18- 92	AB	DD		C
VRS-CY1JD103J	500 581 5097	18- 93	AA	DD		C
"	500 581 5097	19- 24	AA	DD		C
VRS-CY1JD105J	507 581 5052	19- 25	AA	DD		C
VRS-CY1JD123J	571 581 0008	19- 26	AA	DD		C
VRS-CY1JD203J	571 581 0006	18- 97	AA	DD		C
VRS-CY1JD205J	521 581 0006	18- 98	AA	DD		C
VRS-CY1JD220F	572 581 1882	18- 99	AA	DD	N	C
VRS-CY1JD221J	500 581 5111	18- 95	AA	DD		C
VRS-CY1JD242F	594 581 0819	18-101	AA	DD		C
VRS-CY1JD242J	596 581 2169	18-102	AA	DD		C
VRS-CY1JD330J	596 581 0263	18-103	AA	DD		C
VRS-CY1JD331J	585 581 0468	18-104	AA	DD		C
VRS-CY1JD471J	571 581 0002	19- 27	AA	DD		C
VRS-CY1JD472J	595 581 0069	18-105	AA	DD		C
VRS-CY1JD473J	507 581 5058	18-106	AA	DD		C
VRS-CY1JD511J	595 581 0110	18- 96	AA	DD		C
VRS-CY1JD680J	507 581 0005	18- 94	AA	DD		C
VRS-RE3DA131J	578 581 0266	18-108	AC	DD		C
VRS-RE3DA1R0J	578 581 0219	18-107	AB	DD		C
VRS-TP2BD221J	500 581 5017	18-109	AB	DD		C
VRS-TP2BD472J	500 581 0383	18-110	AA	DD		C
VRS-TP2BD473J	500 581 0384	18-111	AA	DD		C
VRS-TP2BD6R8J	572 581 1881	19- 28	AA	DD	N	C
VRS-TS2AD101J	500 581 5047	18-118	AA	DD		C
VS2SA1036KQRC	507 576 5013	18-113	AB	DD		B
VS2SA1162-Y-1	596 576 0137	19- 29	AB	DD		B
VS2SC2712Y/-1	572 576 0364	19- 30	AB	DJ		B
VSDTC114EK/-1	595 576 0038	18-112	AB	DD		B
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XBBS30P04000	541 970 5027	10- 17	AA	DD		C
XBBS30P06000	541 970 5028	7- 10	AA	DD		C
"	541 970 5028	9- 22	AA	DD		C
XBBS30P08000	571 970 0241	4- 23	AA	DD		C
XBBS30P10000	585 970 0050	13- 34	AA	DD		C
XBBS30P10000	577 970 0051	10- 6	AA	DD		C
XBBS30P06000	595 970 0127	1- 16	AA	DD		C



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			Ex.	Ja.		
XBBSE30P06000	595 970 0127	12- 39	AA	DD		C
XBPBZ30P04000	572 970 0554	8- 23	AA	DD		C
XBPSC30P06ES0	572 970 1939	6- 9	AA	DD		C
XBPSD30P05K00	541 970 5005	4- 29	AA	DD		C
XBPSD30P05KS0	541 970 5004	9- 1	AA	DD		C
XBPSD30P08KS0	541 970 1097	9- 9	AA	DD		C
"	541 970 1097	12- 10	AA	DD		C
XBPSD30P10KS0	541 970 0017	6- 42	AB	DD		C
"	541 970 0017	9- 15	AB	DD		C
XBPSD30P30KS0	596 970 0147	12- 7	AA	DD		C
XBPSD40P06KS0	502 970 0010	5- 3	AA	DD		C
XBPSD40P08K00	541 970 1106	4- 5	AA	DD		C
XBPSD40P16KS0	541 970 1096	4- 31	AA	DD		C
XBPSN40P06K00	595 970 0189	12- 17	AA	DD		C
XEBSD20P06000	572 970 0589	14- 42	AA	DD		C
XEBSD30P06000	578 970 0102	6- 23	AA	DD		C
"	578 970 0102	6- 31	AA	DD		C
"	578 970 0102	9- 21	AA	DD		C
"	578 970 0102	14- 4	AA	DD		C
"	578 970 0102	15- 17	AA	DD		C
XEBSD30P08000	578 970 0105	2- 18	AA	DD		C
"	578 970 0105	6- 16	AA	DD		C
"	578 970 0105	11- 11	AA	DD		C
"	578 970 0105	11- 35	AA	DD		C
"	578 970 0105	13- 18	AA	DD		C
"	578 970 0105	13- 52	AA	DD		C
"	578 970 0105	14- 1	AA	DD		C
"	578 970 0105	14- 50	AA	DD		C
"	578 970 0105	16- 12	AA	DD		C
XEBSD30P10000	578 970 0106	3- 7	AA	DD		C
"	578 970 0106	6- 6	AA	DD		C
"	578 970 0106	6- 18	AA	DD		C
"	578 970 0106	7- 1	AA	DD		C
"	578 970 0106	8- 6	AA	DD		C
"	578 970 0106	9- 45	AA	DD		C
"	578 970 0106	11- 8	AA	DD		C
XEBSD30P14000	572 970 1675	14- 17	AA	DD		C
XEBSD30P18000	578 970 0187	12- 46	AA	DD		C
XEBSD40P06000	572 970 1363	5- 6	AA	DD		C
XEBSD40P12000	578 970 0084	11- 22	AA	DD		C
XEBSE30P06000	578 970 0082	13- 43	AA	DD		C
XEBSE30P08000	595 970 0121	1- 26	AA	DD		C
"	595 970 0121	12- 4	AA	DD		C
"	595 970 0121	15- 1	AA	DD		C
XEBSE40P10000	572 970 0575	1- 4	AA	DD		C
"	572 970 0575	1- 14	AA	DD		C
"	572 970 0575	1- 24	AA	DD		C
XEBSF30P08000	577 970 0058	8- 14	AA	DD		C
XEPSD23P12000	595 970 0146	6- 1	AA	DD		C
XEPSD40P12000	572 970 0582	11- 7	AA	DD		C
"	572 970 0582	12- 15	AA	DD		C
XHBSD30P06000	541 970 1017	1- 20	AA	DD		C
"	541 970 1017	4- 6	AA	DD		C
"	541 970 1017	4- 11	AA	DD		C
"	541 970 1017	9- 4	AA	DD		C
"	541 970 1017	12- 13	AA	DD		C
XHBSD30P08000	578 970 0060	10- 2	AA	DD		C
"	578 970 0060	12- 27	AA	DD		C
"	578 970 0060	12- 29	AA	DD		C
XHBSD30P10000	572 970 0530	3- 3	AA	DD		C
"	572 970 0530	12- 28	AA	DD		C
XHBSD30P12000	569 970 0027	12- 26	AA	DD		C
XHBSD30P14000	572 970 1532	3- 5	AA	DD		C
XHBSD30P16000	595 970 0166	3- 11	AA	DD		C
XHBSE30P08000	595 970 0163	1- 17	AA	DD		C
"	595 970 0163	12- 5	AA	DD		C
XHBSF30P05000	594 970 0287	14- 60	AA	DD		C
XPSSJ20-07000	572 218 0379	6- 36	AA	DD		C
"	572 218 0379	13- 8	AA	DD		C
XPSSJ20-10000	572 218 0135	14- 20	AA	DD		C
"	572 218 0135	14- 36	AA	DD		C
XPSSJ30-12000	572 218 0125	4- 45	AB	DD		C
XRESP30-06000	541 399 5002	9- 29	AA	DD		C
"	541 399 5002	14- 62	AA	DD		C
XRESP40-05000	572 399 0053	4- 20	AA	DD		C
XRESP40-06000	509 399 5001	6- 27	AA	DD		C
"	509 399 5001	10- 12	AA	DD		C
"	509 399 5001	11- 13	AA	DD		C
"	509 399 5001	12- 35	AA	DD		C
"	509 399 5001	13- 4	AA	DD		C
"	509 399 5001	14- 34	AA	DD		C

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			Ex.	Ja.		
XRESP40-06000	509 399 5001	14- 53	AA	DD		C
"	509 399 5001	16- 7	AA	DD		C
XRESP50-06000	572 399 0063	4- 38	AA	DD		C
"	572 399 0063	8- 29	AA	DD		C
"	572 399 0063	11- 18	AA	DD		C
"	572 399 0063	14- 12	AA	DD		C
"	572 399 0063	14- 22	AA	DD		C
XRESP60-08000	541 399 5003	6- 39	AA	DD		C
XRESP70-08000	571 399 0027	4- 36	AA	DD		C
XUBUZ30P06000	578 970 0081	8- 24	AA	DD		C
XWHSD30-05080	500 990 0026	12- 48	AA	DD		C
XWHSD30-08100	505 990 5001	16- 13	AA	DD		C
XWSSD30-07000	541 990 0007	12- 47	AA	DD		C
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0KY0C151E101/	572 594 0800	26- 80	AD	DJ	N	C
0KY0C151M221/	572 594 0801	26- 81	AE	DS	N	C
0KY0C171E331/	572 594 0802	26- 82	AD	DJ	N	C
0KY0C1A8S470/	572 594 0820	26- 83	AG	DS	N	C
0KY0C1A9R221/	572 594 0795	26- 83	AG	DS	N	C
0KY0C1A9R331/	572 594 0796	26- 84	AG	DX	N	C
0KY0C1A9R471/	572 594 0797	26- 85	AG	DX	N	C
0KY0C1H6Q222/	572 594 0798	26- 86	AH	DX	N	C
0KY0C1H6Q472/	572 594 0799	26- 86	AK	EB	N	C
"	572 594 0799	26- 87	AK	EB	N	C
0KY0C245Q224/	572 594 0804	26- 88	AN	EG	N	C
0KY0C251E102/	572 594 0805	26- 89	AE	DJ	N	C
0KY0C251E103/	572 594 0806	26- 91	AE	DJ	N	C
0KY0C251E104/	572 594 0807	26- 95	AG	DS	N	C
0KY0C251E223/	572 594 0808	26- 92	AE	DS	N	C
0KY0C251E333/	572 594 0809	26- 93	AE	DS	N	C
0KY0C251E472/	572 594 0810	26- 90	AE	DJ	N	C
0KY0C251E473/	572 594 0811	26- 94	AF	DS	N	C
0KY0C2X0Q104/	572 594 0803	26- 96	AR	EQ	N	C
0KY0C364E4R7/	572 594 0816	26- 97	AH	DX	N	C
0KY0C374D331/	572 594 0817	26- 99	AN	EG	N	C
0KY0C374D820/	572 594 0818	26- 98	AH	DX	N	C
0KY0C375B471/	572 594 0819	26-100	AN	EG	N	C
0KY0C3J5M181/	572 594 0821	26-103	BC	GD	N	C
0KY0C3L2A332/	572 594 0812	26-101	AT	EZ	N	C
0KY0C3L2B152/	572 594 0813	26-102	AS	EQ	N	C
0KY0C3L3L102/	572 594 0814	26-103	BD	GJ	N	C
0KY0C3L7D102/	572 594 0815	26-104	AR	EQ	N	C
0KY0D113A003/	572 570 0482	26- 1	AX	FG	N	B
0KY0D119A006/	572 570 0495	26- 1	AW	FG	N	B
0KY0D157A006/	572 570 0483	26- 2	AF	DS	N	B
0KY0D202B001/	572 570 0484	26- 3	AZ	FQ	N	B
0KY0D202B006/	572 570 0496	26- 3	AZ	FQ	N	B
0KY0D206B003/	572 570 0485	26- 4	AY	FQ	N	B
0KY0D208B006/	572 570 0486	26- 5	AQ	EQ	N	B
0KY0D219B006/	572 570 0487	26- 6	AQ	EQ	N	B
0KY0D251A002/	572 570 0488	26- 7	AD	DJ	N	B
0KY0D264A006/	572 570 0489	26- 8	AL	EB	N	B
0KY0D264A010/	572 570 0497	26- 5	AN	EQ	N	B
0KY0D265A002/	572 570 0490	26- 9	AK	DX	N	B
0KY0D466A024/	572 570 0491	26- 10	AE	DS	N	B
0KY0D466A048/	572 570 0492	26- 11	AE	DS	N	B
0KY0D466A096/	572 570 0493	26- 12	AE	DS	N	B
0KY0D466A105/	572 570 0494	26- 13	AU	EZ	N	B
0KY0D513A406/	572 575 0155	26- 14	AU	EZ	N	B
0KY0D513A606/	572 576 0534	26- 14	AU	EZ	N	B
0KY0D517A416/	572 575 0156	26- 15	BC	GD	N	B
0KY0D517A616/	572 576 0535	26- 15	BC	GJ	N	B
0KY0D719A471/	572 577 0030	26- 28	AM	EG	N	B
0KY0D802A101/	572 580 1148	26- 30	AS	EQ	N	B
0KY0H112A001/	572 573 1854	26- 21	AN	EQ	N	B
0KY0H128A001/	572 573 1855	26- 22	AZ	FQ	N	B
0KY0H130A012/	572 573 1856	26- 23	AT	EZ	N	B
0KY0H141A001/	572 573 1857	26- 24	AZ	FQ	N	B
0KY0H153A001/	572 573 1858	26- 25	AP	EQ	N	B
0KY0H719A001/	572 568 0098	26- 26	AN	EQ	N	B
0KY0H723A001/	572 568 0100	26- 26	AP	EQ	N	B
0KY0H725A001/	572 568 0099	26- 27	AV	FG	N	B
0KY0K202B003/	572 510 1065	26-116	AG	DX	N	C
0KY0K219B003/	572 510 1066	26-117	AS	EZ	N	C
0KY0K219B004/	572 510 1067	26-118	AU	EZ	N	C
0KY0K219B006/	572 510 1068	26-119	AX	FG	N	C
0KY0K235B002/	572 510 1069	26-120	AN	EQ	N	C
0KY0K236B026/	572 510 1070	26-121	AR	EQ	N	C
0KY0K251A002/	572 510 1072	26-124	AG	DX	N	C
0KY0K252P004/	572 532 0206	26-122	AH	DX	N	C
0KY0K309A024/	572 637 0151	26-115	AZ	FQ	N	B



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			Ex.	Ja.		
0KY0K651A362/	572 577 0031	26- 29	AV	FG	N	B
0KY0K704A020/	572 515 0483	26-114	AQ	EQ	N	A
0KY0K716A4R0/	572 515 0484	26-112	AK	DX	N	A
0KY0K716A5R0/	572 515 0485	26-113	AK	DX	N	A
0KY0K717A4R0/	572 515 0487	26-112	AK	DX	N	A
0KY0K718A4R0/	572 515 0488	26-113	AM	EG	N	A
0KY0K722A020/	572 515 0486	26-114	AT	EZ	N	A
0KY0K723A010/	572 515 0489	26-114	AR	EQ	N	A
0KY0L100C002/	572 614 0259	26-105	BC	GJ	N	C
0KY0L100C0022	572 614 0255	26-105	BA	FX	N	C
0KY0L100E011/	572 614 0260	26-106	BD	GN	N	C
0KY0L100E0112	572 614 0256	26-106	BB	GD	N	C
0KY0L107R202/	572 614 0257	26-107	AF	FX	N	C
0KY0L112R502/	572 614 0261	26-125	BB	GD	N	C
0KY0L114R101/	572 614 0262	26-126	AX	FG	N	C
0KY0L115J602/	572 614 0263	26-107	AX	FG	N	C
0KY0L200Q036/	572 660 0422	26-108	BF	GN	N	B
0KY0L200Q0362	572 660 0421	26-108	BE	GN	N	B
0KY0L313R001/	572 614 0258	26-123	AH	DX	N	C
0KY0L551A001/	572 621 0045	26-109	AE	DS	N	B
0KY0L551A002/	572 621 0046	26-110	AF	DS	N	B
0KY0L552A001/	572 621 0047	26-111	AE	DS	N	B
0KY0R153U100/	572 580 1149	26- 31	AC	DJ	N	C
0KY0R153U102/	572 580 1150	26- 37	AC	DJ	N	C
0KY0R153U103/	572 580 1151	26- 43	AC	DJ	N	C
0KY0R153U104/	572 580 1152	26- 50	AC	DJ	N	C
0KY0R153U105/	572 580 1153	26- 52	AC	DJ	N	C
0KY0R153U123/	572 580 1154	26- 44	AC	DJ	N	C
0KY0R153U152/	572 580 1155	26- 38	AC	DJ	N	C
0KY0R153U153/	572 580 1156	26- 45	AC	DJ	N	C
0KY0R153U220/	572 580 1157	26- 32	AC	DJ	N	C
0KY0R153U221/	572 580 1158	26- 33	AC	DJ	N	C
0KY0R153U222/	572 580 1159	26- 39	AC	DJ	N	C
0KY0R153U223/	572 580 1160	26- 46	AC	DJ	N	C
0KY0R153U224/	572 580 1161	26- 51	AC	DJ	N	C
0KY0R153U272/	572 580 1162	26- 40	AC	DJ	N	C
0KY0R153U273/	572 580 1163	26- 47	AC	DJ	N	C
0KY0R153U331/	572 580 1164	26- 34	AC	DJ	N	C
0KY0R153U332/	572 580 1165	26- 41	AC	DJ	N	C
0KY0R153U391/	572 580 1166	26- 35	AC	DJ	N	C
0KY0R153U471/	572 580 1167	26- 36	AC	DJ	N	C
0KY0R153U472/	572 580 1168	26- 42	AC	DJ	N	C
0KY0R153U473/	572 580 1169	26- 48	AC	DJ	N	C
0KY0R153U683/	572 580 1170	26- 49	AC	DJ	N	C
0KY0R163B564/	572 580 1171	26- 53	AE	DJ	N	C
0KY0R353U100/	572 580 1172	26- 54	AD	DJ	N	C
0KY0R353U102/	572 580 1173	26- 61	AD	DJ	N	C
0KY0R353U122/	572 580 1174	26- 62	AD	DJ	N	C
0KY0R353U153/	572 580 1175	26- 64	AD	DJ	N	C
0KY0R353U181/	572 580 1176	26- 56	AD	DJ	N	C
0KY0R353U221/	572 580 1177	26- 57	AD	DJ	N	C
"	572 580 1177	26- 58	AD	DJ	N	C
0KY0R353U223/	572 580 1178	26- 65	AD	DJ	N	C
0KY0R353U241/	572 580 1197	26- 57	AD	DJ	N	C
0KY0R353U271/	572 580 1179	26- 58	AD	DJ	N	C
0KY0R353U330/	572 580 1180	26- 55	AD	DJ	N	C
0KY0R353U392/	572 580 1181	26- 63	AD	DJ	N	C
0KY0R353U431/	572 580 1182	26- 59	AD	DJ	N	C
0KY0R353U821/	572 580 1183	26- 60	AD	DJ	N	C
0KY0R362U100/	572 580 1184	26- 66	AG	DX	N	C
0KY0R451C101/	572 580 1185	26- 68	AE	DS	N	C
0KY0R451C121/	572 580 1186	26- 69	AE	DS	N	C
0KY0R451C220/	572 580 1187	26- 67	AE	DS	N	C
0KY0R451C222/	572 580 1188	26- 70	AF	DS	N	C
0KY0R452D100/	572 580 1189	26- 67	AF	DS	N	C
"	572 580 1189	26- 71	AF	DS	N	C
0KY0R452D101/	572 580 1190	26- 72	AF	DS	N	C
0KY0R452D153/	572 580 1191	26- 73	AF	DS	N	C
0KY0R452D273/	572 580 1192	26- 74	AF	DS	N	C
0KY0R452D473/	572 580 1198	26- 73	AF	DS	N	C
"	572 580 1198	26- 75	AF	DS	N	C
0KY0R452D563/	572 580 1193	26- 75	AF	DS	N	C
0KY0R452D683/	572 580 1199	26- 74	AF	DS	N	C
0KY0R516FR01/	572 580 1194	26- 76	AR	EQ	N	C
0KY0R516FR05/	572 580 1195	26- 77	AR	EQ	N	C
0KY0R516FR15/	572 580 1200	26- 77	AR	EQ	N	C
0KY0R522F100/	572 580 1196	26- 78	AU	EZ	N	C
0KY0R854E102/	572 670 0182	26- 79	AG	DS	N	B
0KY0T351A005/	572 576 0520	26- 20	AF	DS	N	B
0KY0T415A003/	572 576 0530	26- 17	AT	EZ	N	B
0KY0T421A001/	572 576 0531	26- 18	BA	FX	N	B

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